

L^AT_EX Class for *Association for Computing Machinery**

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Abstract

This package provides a class for typesetting publications of Association for Computing Machinery.

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1 Introduction

Association for Computing Machinery is the world's largest educational and scientific computing society, which delivers resources that advance computing as a science and a profession¹. It was one of the early adopters of T_EX for its typesetting.

It provided several different classes for a number of journal and conference proceedings. Unfortunately during the years since these classes were written, the code was patched many times, and the support of the different versions of the classes became difficult.

This package provides the uniform interface for all ACM publications. It is intended to replace all different classes and packages and provide an up to date L^AT_EX package.

The package uses only free T_EX packages and fonts included in T_EXLive, MikT_EX and other popular T_EX distributions. It is intended to be published in these distributions itself, which minimizes users' efforts in the installation and support of the package.

I am grateful to Michael D. Adams, Leif Andersen, Dirk Beyer, Michael Ekstrand, Matthew Fluet, Paolo G. Giarrusso, Ben Greenman, LianTze Lim, Ben Liblit, Frank Mittelbach, Ross Moore, John Owens, Joel Nider, Tobias Pape, Mathias Rav, Matteo Riondato, Craig Rodkin, Bernard Rous, David Shamma, Stephen Spencer, John Wickerson, and many others for their invaluable help.

The development version of the package is available at <https://github.com/borisveytsman/acmart>.

2 User's guide

2.1 Installation

Most probably, you already have this package installed in your favorite T_EX distribution; if not, you may want to upgrade. You may need to upgrade it anyway since the package uses a number of relatively recent packages, especially the ones related to the fonts.

The latest released version of the package can be found on CTAN: <https://www.ctan.org/pkg/acmart>. The development version can be found on GitHub: <https://github.com/borisveytsman/acmart>. At this address you can file a bug report—or even contribute your own enhancement making a pull request.

Most users should not attempt to install this package themselves, and rather rely on their T_EX distributions to provide it. If you decide to install the package yourself, follow the standard rules:

1. Run `latex onacmart.ins`. This will produce the files `acmart.cls` and `acmthm.sty`
2. Put the files `acmart.cls`, `acmthm.sty` and the bibliography files `*.bst` to the places where L^AT_EX can find them (see [1] or the documentation for your T_EX system).
3. Update the database of file names. Again, see [1] or the documentation for your T_EX system for the system-specific details.

¹<http://www.acm.org/>

4. The file `acmart.pdf` provides the documentation for the package (this is the file you are probably reading now).

As an alternative to items 2 and 3 you can just put the files in the working directory where your `.tex` file is.

The class uses a number of other packages. They are included in all major \TeX distributions (\TeX Live, Mac \TeX , Mik \TeX) of 2015 and later, so you probably have them installed. Just in case here is the list of these packages:

- *amscs*, <http://www.ctan.org/pkg/amscs>
- *amsfonts*, <http://www.ctan.org/pkg/amsfonts>
- *amsmath*, <http://www.ctan.org/pkg/amsmath>
- *binhex*, <http://www.ctan.org/pkg/binhex>
- *caption*, <http://www.ctan.org/pkg/caption>
- *comment*, <http://www.ctan.org/pkg/comment>
- *cm-super*, <http://www.ctan.org/pkg/cm-super>
- *cmap*, <http://www.ctan.org/pkg/cmap>
- *draftwatermark*, <http://www.ctan.org/pkg/draftwatermark>
- *environ*, <http://www.ctan.org/pkg/environ>
- *fancyhdr*, <http://www.ctan.org/pkg/fancyhdr>
- *float*, <http://www.ctan.org/pkg/float>
- *fontaxes*, <http://www.ctan.org/pkg/fontaxes>
- *geometry*, <http://www.ctan.org/pkg/geometry>
- *graphics*, <http://www.ctan.org/pkg/graphics>
- *hyperref*, <http://www.ctan.org/pkg/hyperref>
- *ifluatex*, <http://www.ctan.org/pkg/ifluatex>
- *ifxetex*, <http://www.ctan.org/pkg/ifxetex>
- *inconsolata*, <http://www.ctan.org/pkg/inconsolata>
- *libertine*, <http://www.ctan.org/pkg/libertine>
- *manyfoot*, <http://www.ctan.org/pkg/manyfoot>
- *microtype*, <http://www.ctan.org/pkg/microtype>
- *mmap*, <http://www.ctan.org/pkg/mmap>

- *ms*, <http://www.ctan.org/pkg/ms>
- *mweights*, <http://www.ctan.org/pkg/mweights>
- *natbib*, <http://www.ctan.org/pkg/natbib>
- *nccfoots*, <http://www.ctan.org/pkg/nccfoots>
- *newtx*, <http://www.ctan.org/pkg/newtx>
- *oberdiek*, <http://www.ctan.org/pkg/oberdiek>
- *pdfTeX-def*, <http://www.ctan.org/pkg/pdfTeX-def>
- *refcount*, <http://www.ctan.org/pkg/refcount>
- *setspace*, <http://www.ctan.org/pkg/setspace>
- *textcase*, <http://www.ctan.org/pkg/textcase>
- *totpages*, <http://www.ctan.org/pkg/totpages>
- *trimspaces*, <http://www.ctan.org/pkg/trimspaces>
- *upquote*, <http://www.ctan.org/pkg/upquote>
- *url*, <http://www.ctan.org/pkg/url>
- *xcolor*, <http://www.ctan.org/pkg/xcolor>
- *xkeyval*, <http://www.ctan.org/pkg/xkeyval>
- *xstring*, <http://www.ctan.org/pkg/xstring>

2.2 Invocation and options

To use the class put in the preamble of your document

```
\documentclass[options]{acmart}
```

There are several options corresponding to the type of the document and its general appearance. They are described below. Generally speaking, the options have key=value forms, for example

```
\documentclass[format=acmsmall, screen=true, review=false]{acmart}
```

The option `format` describes the format of the output. There are several possible values for this option, for example,

```
\documentclass[format=acmtog]{acmart}
```

Table 1: The possible values for the format option

Value	Meaning
manuscript	A manuscript. This is the default
acmsmall	Small single column format, used for CIE, CSUR, JACM, JDIQ, JEA, JERIC, JETC, PACMHCI, PACMPL, TAAS, TACCESS, TACO, TALG, TALLIP (formerly TALIP), TCPS, TEAC, TECS, TIIS, TISSEC, TIST, TKDD, TMIS, TOCE, TOCHI, TOCL, TOCS, TOCT, TODAES, TODS, TOIS, TOIT, TOMACS, TOMM (formerly TOMCCAP), TOMPECS, TOMS, TOPC, TOPLAS, TOPS, TOS, TOSEM, TOSN, TRET, TSAS, TSC, TSLP, TWEB, including special issues.
acmlarge	Large single column format, used for IMWUT, JOCCH, POMACS, TAP, including special issues.
acmtog	Large double column format, used for TOG, including special issues.
sigconf	Proceedings format for most of ACM conferences (with the exceptions listed below) and all ICPS volumes.
siggraph	As of March 2017, this format is no longer used. Please use sigconf for SIGGRAPH conferences.
sigplan	Proceedings format for SIGPLAN conferences.
sigchi	Proceedings format for SIGCHI conferences.
sigchi-a	Format for SIGCHI extended abstract.

Actually the words `format=` can be omitted, e.g.,

```
\documentclass[acmtog, review=false]{acmart}
```

The possible formats are listed in Table 1. Note that formats starting with `acm` are intended for journals and transactions, while formats starting with `sig` are intended for proceedings published as books.

Note that sometimes conference proceedings are published as a special issue (or issues) of an ACM journal. In this case you should use the journal format for a conference paper. Please contact your conference committee if in doubt.

There are several Boolean options which can take true or false values. They are listed in Table 2. The words `=true` can be omitted when setting the Boolean option, so instead of `screen=true` one can write just `screen`, for example,

```
\documentclass[acmsmall, screen, review]{acmart}
```

The option `review` is useful when combined with the `manuscript` format option: it provides a version suitable for reviewers and copyeditors.

The option `screen` may in the future involve additional features suitable for on-screen versions of the articles.

The option `natbib` is used when the corresponding `BIBTEX` style is based on `natbib`. In most cases you do not need to set it. See Section 2.10.

Table 2: Boolean options

Option	Default	Meaning
review	false	A review version: lines are numbered, hyperlinks are colored
screen	false	A screen version: hyperlinks are colored
natbib	true	Whether to use natbib package (see Section 2.10)
anonymous	false	Whether to make author(s) anonymous
authorversion	false	Whether to generate a special version for authors' personal use or posting (see Section 2.3)
timestamp	false	Whether to put a time stamp in the footer of each page
authordraft	false	Whether author's draft mode is enabled
acmthm	true	Whether to load acmthm.sty, see Section 2.6

The option `anonymous` is used for anonymous review process: all author information becomes obscured.

The option `timestamp` is used to include a time stamp in the footer of each page. When preparing a document, this can help avoid confusing different revisions. The footer also include the page range of the document. This helps detect missing pages in hard copies.

The option `authordraft` is intended for the authors' drafts, not intended for distribution. It typesets copyright block to give the authors the idea of its size and overall size of the paper, but overprints it with the phrase "Unpublished working draft. Not for distribution", which also is used as a watermark. This option sets `timestamp` and `review` to `true`, but these decisions can be overridden by setting these options to `false` *after* `authordraft`.

2.3 Topmatter commands

A number of commands set up *top matter* information, or, in the computer science jargon, *metadata* for the article. They establish the publication name, article title, authors, doi and other data. Some of these commands, like `\title` or `\author`, should be put by the authors. Others, like `\acmVolume` or `\acmDOI`—by the editors. Below we describe these commands and mention who should issue them. These macros should be used *before* the `\maketitle` command. Note that in the previous versions of ACM classes some of these commands should be used before `\maketitle`, and some after it. Now they all must be used before `\maketitle`.

The class internally loads `amsart` class, so many top matter commands are inherited from `amsart` [2].

`\acmJournal` The macro `\acmJournal{<shortName>}` sets the name of the journal or transaction for journals and transactions. The argument is the short name of the publication in *uppercase*, for example,

```
\acmJournal{TOMS}
```

The currently recognized journals are listed in Table 3. Note that conference proceedings published in *book* form do not set this macro.

It is expected that this command is inserted by the author of the manuscript when she decides to which journal to submit the manuscript.

`\acmConference` The macro `\acmConference[<short name>]{<name>}{<date>}{<venue>}` is used for conference proceedings published in the book form. The arguments are the following:

short name: the abbreviated name of the conference (optional).

name: the name of the conference.

date: the date(s) of the conference.

venue: the place of the conference.

Examples:

```
\acmConference[TD'15]{Technical Data Conference}{November
12--16}{Dallas, TX, USA}
\acmConference[SA'15 Art Papers]{November 02--06, 2015}{Kobe, Japan}
```

`\acmBooktitle` By default we assume that the conference proceedings are published in the book named *Proceedings of CONFERENCE*, where CONFERENCE is the name of the conference inferred from the command `\acmConference` above. However, sometimes the book title is different. The command `\acmBooktitle` may be used to set this title, for example,

```
\acmBooktitle{Companion to the first International Conference on the
Art, Science and Engineering of Programming (Programming '17)}
```

`\editor` In most cases conference proceedings are edited. You can use the command `\editor[<editor>]` to set the editor of the volume. This command can be repeated, for example,

```
\editor{Jennifer B. Sartor}
\editor{Theo D'Hondt}
\editor{Wolfgang De Meuter}
```

`\title` The command `\title`, as in `amsart` class, has two arguments: one optional, and one mandatory:

```
\title[<ShortTitle>]{<FullTitle>}
```

The mandatory argument is the full title of the article. The optional argument, if present, defines the shorter version of the title for running heads. If the optional argument is absent, the full title is used instead.

It is expected that this command is inserted by the author of the manuscript.

`\subtitle` Besides title, ACM classes allow subtitle, set with the `\subtitle{<subtitle>}` macro.

The commands for specification of authors are highly structured. The reason is, they serve double duty: the authors' information is typeset in the manuscript, *and* is used by

Table 3: ACM publications and arguments of the \acmJournal command

Abbreviation	Publication
CIE	ACM Computers in Entertainment
CSUR	ACM Computing Surveys
IMWUT	PACM on Interactive, Mobile, Wearable and Ubiquitous Technologies
JACM	Journal of the ACM
JDIQ	ACM Journal of Data and Information Quality
JEA	ACM Journal of Experimental Algorithmics
JERIC	ACM Journal of Educational Resources in Computing
JETC	ACM Journal on Emerging Technologies in Computing Systems
JOCH	ACM Journal on Computing and Cultural Heritage
PACMHCI	PACM on Human-Computer Interaction
PACMPL	PACM on Programming Languages
POMACS	PACM on Measurement and Analysis of Computing Systems
TAAS	ACM Transactions on Autonomous and Adaptive Systems
TACCESS	ACM Transactions on Accessible Computing
TACO	ACM Transactions on Architecture and Code Optimization
TALG	ACM Transactions on Algorithms
TALLIP	ACM Transactions on Asian and Low-Resource Language Information Processing
TAP	ACM Transactions on Applied Perception
TCPS	ACM Transactions on Cyber-Physical Systems
TEAC	ACM Transactions on Economics and Computation
TECS	ACM Transactions on Embedded Computing Systems
TIIS	ACM Transactions on Interactive Intelligent Systems
TISSEC	ACM Transactions on Information and System Security
TIST	ACM Transactions on Intelligent Systems and Technology
TKDD	ACM Transactions on Knowledge Discovery from Data
TMIS	ACM Transactions on Management Information Systems
TOCE	ACM Transactions on Computing Education
TOCHI	ACM Transactions on Computer-Human Interaction
TOCL	ACM Transactions on Computational Logic
TOCS	ACM Transactions on Computer Systems
TOCT	ACM Transactions on Computation Theory
TODAES	ACM Transactions on Design Automation of Electronic Systems
TODS	ACM Transactions on Database Systems
TOG	ACM Transactions on Graphics
TOIS	ACM Transactions on Information Systems
TOIT	ACM Transactions on Internet Technology
TOMACS	ACM Transactions on Modeling and Computer Simulation
TOMM	ACM Transactions on Multimedia Computing, Communications and Applications
TOMPECS	ACM Transactions on Modeling and Performance Evaluation of Computing Systems
TOMS	ACM Transactions on Mathematical Software
TOPC	ACM Transactions on Parallel Computing
TOPLAS	ACM Transactions on Programming Languages and Systems
TOPS	ACM Transactions on Privacy and Security
TOS	ACM Transactions on Storage
TOSEM	ACM Transactions on Software Engineering and Methodology
TOSN	ACM Transactions on Sensor Networks
TRETS	ACM Transactions on Reconfigurable Technology and Systems
TSAS	ACM Transactions on Spatial Algorithms and Systems
TSC	ACM Transactions on Social Computing
TSLP	ACM Transactions on Speech and Language Processing
TWEB	ACM Transactions on the Web

the metadata extraction tools for indexing and cataloguing. Therefore it is very important to follow the guidelines exactly.

<code>\author</code> <code>\orcid</code> <code>\affiliation</code> <code>\email</code>	<p>The basic commands are <code>\author</code>, <code>\orcid</code> (for the researchers registered with ORCID, http://www.orcid.org/), <code>\affiliation</code> and <code>\email</code>. In the simplest case you enter them in this order:</p> <pre> \author{...} \orcid{...} \affiliation{...} \email{...} </pre>
---	---

Do *not* use \LaTeX `\and` macro! Each author deserves his or her own `\author` command.

Note that some formats do not typeset e-mails of ORCID identifiers. Do not worry: metadata tools will get them.

Sometimes an author has several affiliations. In this case the `\affiliation` command should be repeated:

```

\author{...}
\orcid{...}
\affiliation{...}
\affiliation{...}
\email{...}

```

Similarly you can repeat `\email` command.

You may have several authors with the same affiliation, different affiliations, or overlapping affiliations (author A_1 is affiliated with institutions I_1 and I_2 , while author A_2 is affiliated with I_2 only, and author A_3 is affiliated with I_1 and I_3, \dots). The recommended solution is to put the `\affiliation` commands after each author, possibly repeating them:

```

\author{...}
\orcid{...}
\affiliation{...}
\affiliation{...}
\email{...}
\author{...}
\orcid{...}
\affiliation{...}
\email{...}
\author{...}
\orcid{...}
\affiliation{...}
\affiliation{...}
\email{...}

```

In some cases when several authors share the same affiliation you may try to save the space using the format

```

\author{...}
\email{...}
\author{...}
\email{...}
\affiliation{...}

```

However, this format is not generally recommended.

`\additionalaffiliation` In some cases too many affiliations take too much space. The command `\additionalaffiliation{<affiliation>}` creates a footnote after author's name with the words "Also with {<affiliation>}". You should use this command only as the last resort. An example of usage is:

```

\author{G. Tobin}
\author{Ben Trovato}
\additionalaffiliation{%
  \institution{The Th{\o}rv{\"}ld Group}
  \streetaddress{1 Th{\o}rv{\"}ld Circle}
  \city{Hekla}
  \country{Iceland}}
\affiliation{%
  \institution{Institute for Clarity in Documentation}
  \streetaddress{P.O. Box 1212}
  \city{Dublin}
  \state{Ohio}
  \postcode{43017-6221}
}

```

Here Trovato and Tobin share their affiliation with the Institute for Clarity in Documentation, but only Ben Trovato is affiliated with The Thørvæld Group.

`\position` The `\affiliation` and `\additionalaffiliation` commands are further structured to interact with the metadata extraction tools. Inside these commands you should use `\institution`, `\department`, `\position`, `\city`, `\streetaddress`, `\state`, `\postcode` and `\country` macros to indicate the corresponding parts of the affiliation. Note that in some cases (for example, journals) these parts are not printed in the resulting copy, but they *are* necessary since they are used by the XML metadata extraction programs. Do *not* put commas or `\\` between the elements of `\affiliation`: they will be provided automatically.

An example of the author block:

```

\author{A. U. Thor}
\orcid{1234-4564-1234-4565}
\affiliation{%
  \institution{University of New South Wales}
  \department{School of Biomedical Engineering}
  \streetaddress{Samuels Building (F25), Kensington Campus}
  \city{Sidney}
  \state{NSW}
  \postcode{2052}
  \country{Australia}}

```

```

\email{author@nsw.au.edu}
\author{A. N. Other}
\affiliation{%
  \institution{University of New South Wales}
  \city{Sidney}
  \state{NSW}
  \country{Australia}}
\author{C. O. Respondent}
\orcid{1234-4565-4564-1234}
\affiliation{%
  \institution{University of Pennsylvania}
  \city{Philadelphia}
  \state{PA}
  \country{USA}}
\affiliation{%
  \institution{University of New South Wales}
  \city{Sidney}
  \state{NSW}
  \country{Australia}}

```

Note that old ACM conference formats did not allow for more than six authors and required some efforts from the authors to achieve alignment. The new format is much better in this.

Sometimes an author works in several departments within the same insitution. There could be two situations: the departments are independent, or one department is within another. In the first case just repeat the command `\department` several times. To handle the second case the command has an optional numerical parameter. The departments with higher numbers are higher in the organizational chart. Compare

```

\affiliation{%
\department[0]{Department of Lunar Studies} % 0 is the default
\department[1]{John Doe Institute} % higher than 0
\institution{University of San Serriffe}
\country{San Serriffe}}

```

and

```

\affiliation{%
\department{Department of Lunar Studies} % Not within JD Inst!
\department{John Doe Institute}
\institution{University of San Serriffe}
\country{San Serriffe}}

```

The command `\affiliation` formats the output according to American conventions. This might be wrong for some cases. Consider, for example, a German address. In Germany postcode is put before city and is not separated by a comma. We can handle this order using

```

\affiliation{%
  \institution{Fluginstitut}
  \streetaddress{Sonnenallee 17}
  \postcode{123456}
  \city{Helm}
  \country{Germany}
}

```

However, the comma after postcode is unfortunate: the address will be typeset (in some formats) as

```

Fluginstitut
Sonnenallee 17
123456, Helm, Germany

```

To overcome this problem, the command `\affiliation` has an optional parameter `obeypunctuation`, which can be `false` (the default) or `true`. If this parameter is `true`, `\affiliation` obeys the author's command. Thus

```

\affiliation[obeypunctuation=true]{%
  \institution{Fluginstitut}\\
  \streetaddress{Sonnenallee 17}\\
  \postcode{123456}
  \city{Helm},
  \country{Germany}
}

```

will be typeset as

```

Fluginstitut
Sonnenallee 17
123456 Helm, Germany

```

Note that you should *not* use this option for journals.

It is expected that these commands are inserted by the author of the manuscript.

`\thanks` Like `amsart` (and unlike standard \LaTeX), we allow `\thanks` only *outside* of commands `\title` and `\author`. Example:

```

\thanks{This work is supported by the Widget Corporation Grant
\#312-001.\\
Author's address: D. Pineo, Kingsbury Hall, 33 Academic Way, Durham,
N.H. 03824; email: dspineo@comcast.net; Colin Ware, Jere A. Chase
Ocean Engineering Lab, 24 Colovos Road, Durham, NH 03824; email:
cware@ccom.unh.edu;
Sean Fogarty, (Current address) NASA Ames Research Center, Moffett
Field, California 94035.}

```

	It is expected that this command is inserted by the author of the manuscript.
<code>\titlenote</code>	While the command <code>\thanks</code> generates a note without footnote mark, sometimes
<code>\subtitlenote</code>	the authors might need notes more tightly connected to the title, subtitle or author. The
<code>\authornote</code>	commands <code>\titlenote</code> , <code>\subtitlenote</code> and <code>\authornote</code> that follow the corresponding commands (<code>\title</code> , <code>\subtitle</code> and <code>\author</code>) generate such notes, for example
	<pre> \titlenote{This is a title} \titlenote{This is a titlenote} \author{A. U. Thor} \authornote{This is an authornote} </pre>
	Please never use <code>\footnotes</code> inside <code>\author</code> or <code>\title</code> commands, since this confuses metadata extraction software (actually these commands now produce errors).
<code>\authornotemark</code>	Sometimes one may need to have the same footnote connected to several authors. The command <code>\authornotemark[<i>number</i>]</code> adds just the footnote mark, for example
	<pre> \author{A. U. Thor} \authornote{Both authors contributed equally to the paper} ... \author{A. N. Other} \authornotemark[1] </pre>
	The correct numbering of these marks is the responsibility of the user.
<code>\acmVolume</code>	The macros <code>\acmVolume</code> , <code>\acmNumber</code> , <code>\acmArticle</code> , <code>\acmYear</code> and <code>\acmMonth</code> are
<code>\acmNumber</code>	inserted by the editor and set the journal volume, issue, article number, year and month
<code>\acmArticle</code>	correspondingly. The arguments of all these commands, including <code>\acmMonth</code> is numerical, including <code>\acmMonth</code> , for example,
<code>\acmYear</code>	<pre> \acmVolume{9} \acmNumber{4} \acmArticle{39} \acmYear{2010} \acmMonth{3} </pre>
<code>\acmMonth</code>	
	Note that <code>\acmArticle</code> is used not only for journals, but also for some conference proceedings.
<code>\acmArticleSeq</code>	The articles in the same issue of a journal have a <i>sequential number</i> . It is used to vertically position the black blob in some formats. By default it is the same as article number, but the command <code>\acmArticleSeq{<i>n</i>}</code> can be used to change it:
	<pre> \acmArticle{39} % The sequence number will be 39 by default \acmArticleSeq{5} % We redefine it to 5 </pre>
	Setting this number to zero suppresses the blob.
<code>\acmSubmissionID</code>	If you paper got a Submission ID from the Conference Management System, put it here:
	<code>\acmSubmissionID{123-A56-BU3}</code>

<code>\acmPrice</code>	<p>The macro <code>\acmPrice{<price>}</code> sets the price for the article</p> <pre>\acmPrice{25.00}</pre> <p>Note that you do not need to put the dollar sign here, just the amount. By default the price is \$15.00, unless the copyright is set to <code>usgov</code> or <code>rightsretained</code>, when it is suppressed. Note that to override the defaults you need to set the price <i>after</i> the <code>\setcopyright</code> command to override the default. Also, the command <code>\acmPrice{}</code> suppresses the printing of the price.</p>
<code>\acmISBN</code>	<p>Book-like volumes have ISBN numbers attached to them. The macro <code>\acmISBN{<ISBN>}</code> sets it. Normally it is set by the typesetter, for example,</p> <pre>\acmISBN{978-1-4503-3916-2}</pre> <p>Setting it to empty string, as <code>\acmISBN{}</code>, suppresses printing of ISBN.</p>
<code>\acmDOI</code>	<p>The macro <code>\acmDOI{<DOI>}</code> sets the DOI number of the article, for example,</p> <pre>\acmDOI{10.1145/9999997.9999999}</pre> <p>It is normally set by the typesetter. Setting it to empty string, <code>\acmDOI{}</code> suppresses DOI.</p>
<code>\acmBadgerR</code> <code>\acmBadgerL</code>	<p>Some conference articles get special distinction, for example, the artifact evaluation for PPOPP 2016 (see http://ctuning.org/ae/ppopp2016.html). These articles display special badges supplied by the conference organizers. The class provides commands to add these badges: <code>\acmBadgerR[<url>]{<graphics>}</code> and <code>\acmBadgerL[<url>]{<graphics>}</code>. The first command puts the badge to the right of the title, and the second one—to the left. The exception is the <code>sigchi</code>—a mode for SIGCHI Extended abstract, which puts the badges on the left margin. The argument have the following meaning: <code>[<url>]</code>, if provided, sets the link to the badge authority in the screen version, while <code>{<graphics>}</code> sets the graphics file with the badge image. The file must be a cropped square, which is scaled to a standard size in the output. For example, if the badge image is <code>ae-logo.pdf</code>, the command is</p> <pre>\acmBadgerR[http://ctuning.org/ae/ppopp2016.html]{ae-logo}</pre>
<code>\startPage</code>	<p>The macro <code>\startPage{<page>}</code> sets the first page of the article in the journal or book. It is used by the typesetter.</p>
<code>\terms</code> <code>\keywords</code>	<p>The command <code>\keywords{<keyword, keyword,...>}</code> sets keywords for the article. They must be separated by commas, for example,</p> <pre>\keywords{wireless sensor networks, media access control, multi-channel, radio interference, time synchronization}</pre>
<code>CCSXML</code> <code>\ccsdesc</code>	<p>ACM publications are classified according to the ACM Computing Classification Scheme (CCS). CCS codes are used both in the typeset version of the publications <i>and</i></p>

in the metadata in the various databases. Therefore you need to provide both \TeX commands and XML metadata with the paper.

The tool at <http://dl.acm.org/ccs.cfm> can be used to generate CCS codes. After you select the topics, click on “Generate CCS codes” to get the result like the following:

```
\begin{CCSXML}
<ccs2012>
  <concept>
    <concept_id>10010520.10010553.10010562</concept_id>
    <concept_desc>Computer systems organization~Embedded systems</concept_desc>
    <concept_significance>500</concept_significance>
  </concept>
  <concept>
    <concept_id>10010520.10010575.10010755</concept_id>
    <concept_desc>Computer systems organization~Redundancy</concept_desc>
    <concept_significance>300</concept_significance>
  </concept>
  <concept>
    <concept_id>10010520.10010553.10010554</concept_id>
    <concept_desc>Computer systems organization~Robotics</concept_desc>
    <concept_significance>100</concept_significance>
  </concept>
  <concept>
    <concept_id>10003033.10003083.10003095</concept_id>
    <concept_desc>Networks~Network reliability</concept_desc>
    <concept_significance>100</concept_significance>
  </concept>
</ccs2012>
\end{CCSXML}

\ccsdesc[500]{Computer systems organization~Embedded systems}
\ccsdesc[300]{Computer systems organization~Redundancy}
\ccsdesc{Computer systems organization~Robotics}
\ccsdesc[100]{Networks~Network reliability}
```

You need to just copy this code and paste it in your paper anywhere before $\text{\textbackslash maketitle}$.

$\text{\textbackslash setcopyright}$ There are several possibilities for the copyright of the papers published by ACM: the authors may transfer the rights to ACM, license them to ACM, some or all authors might be employees of the US or Canada Government, etc. Accordingly the command $\text{\textbackslash setcopyright}\{\dots\}$ is introduced. Its argument is the copyright status of the paper, for example, $\text{\textbackslash setcopyright}\{\text{acmcopyright}\}$. The possible values for this command are listed in Table 4.

The ACM submission software should generate the right command for you to paste into your file.

$\text{\textbackslash copyrightyear}$ Each copyright statement must have the year of copyright. By default it is the same as $\text{\textbackslash acmYear}$, but you can override this decision using the macro $\text{\textbackslash copyrightyear}$, e.g.,

Table 4: Parameters for \setcopyright command

Parameter	Meaning
none	The copyright and permission information is not typeset (this is the option for some ACM conferences).
acmcopyright	The authors transfer the copyright to ACM (the “traditional” choice).
acmlicensed	The authors retain the copyright but license the publication rights to ACM.
rightsretained	The authors retain the copyright and publication rights to themselves or somebody else.
usgov	All the authors are employees of the US Government.
usgovmixed	Some authors are employees of the US Government.
cagov	All the authors are employees of the Canadian Government.
cagovmixed	Some authors are employees of the Canadian Government.
licensedusgovmixed	Some authors are employees of the US Government, and the publication rights are licensed to ACM.
licensedcagov	All the authors are employees of the Canadian Government, and the publication rights are licensed to ACM.
licensedcagovmixed	Some authors are employees of the Canadian Government, and the publication rights are licensed to ACM.
othergov	Authors are employees of a Government other than US or Canada.
licensedothergov	Authors are employees of a Government other than US or Canada, and the publication rights are licensed to ACM.

```
\acmYear{2016}
\copyrightyear{2015}
```

There is a special case for a personal copy that the authors may be allowed to generate for their use or a posting on a personal site (check the instructions for the specific journal or conference for the details). The document option `authorversion=true` produces the special form of the copyright statement for this case. Note that you still need the `\setcopyright` command and (optionally) `\copyrightyear` command to tell \TeX about the copyright owner and year. Also, you should be aware that due to the different sizes of the permission blocks for the printed version and authors' version the page breaks might be different between them.

`abstract` The environment `abstract` must *precede* `\maketitle` command. Again, this is different from the standard \LaTeX .

`teaserfigure` A special kind of figure is used for many two-column conference proceedings. This figure is placed just after the authors, but before the main text. The environment `teaserfigure` is used for these figures. This environment must be used *before* `\maketitle`, for example,

```
\begin{teaserfigure}
  \includegraphics[width=\textwidth]{sampleteaser}
  \caption{This is a teaser}
  \label{fig:teaser}
\end{teaserfigure}
```

`\settopmatter` Some information in the top matter is printed for certain journals or proceedings and suppressed for others. You may override these defaults using the command `\settopmatter{<settings>}`. The settings and their meanings are listed in Table 5. For example,

```
\settopmatter{printacmref=false, printccs=true, printfolios=true}
```

The parameter `authorsperrow` requires some explanation. In conference proceedings authors' information is typeset in boxes, several boxes per row (see `sample-sigconf.pdf`, `sample-sigplan.pdf` etc.). The number of the boxes per row is determined automatically. If you want to override this decision, you may do it using this parameter, for example,

```
\settopmatter{authorsperrow=4}
```

However, in most cases you should *not* do this and use the default settings. Setting `authorsperrow` to 0 will revert to default settings.

`\received` The command `\received[<stage>]{<date>}` sets the history of the publication. The `[<stage>]` argument is optional; the default is Received for the first date and revised for the subsequent ones. For example

```
\received{February 2007}
```

Table 5: Settings for `\settopmatter` command

Parameter	Values	Meaning
<code>printccs</code>	true/false	Whether to print CCS categories
<code>printacmref</code>	true/false	Whether to print ACM bibliographic entry
<code>printfolios</code>	true/false	Whether to print page numbers (folios)
<code>authorsperrow</code>	numeric	Number of authors per row for title page in conference proceedings formats

```
\received[revised]{March 2009}
\received[accepted]{June 2009}
```

`\maketitle` The macro `\maketitle` must be the last command in the top matter group: i.e., it must follow the commands defined in this section.

`\shortauthors` After the command `\maketitle` the macro `\shortauthors` stores the names of the authors for the running head. You may redefine it if the list of author's name is too long, e.g.,

```
\maketitle
\renewcommand{\shortauthors}{Zhou et al.}
```

2.4 Algorithms

There are now several good packages for typesetting algorithms [3, 4, 5], and the authors are now free to choose their favorite one.

2.5 Figures and tables

New ACM styles use the standard \LaTeX interface for figures and tables. There are some important items to be aware of, however.

1. The captions for figures must be entered *after* the figure bodies, and for the tables *before* the table bodies.
2. ACM uses the standard types for figures and types and adds several new ones. In total there are the following types:

figure, table: a standard figure or table, taking full text width in one-column formats and one column in two-column formats.

figure*, table* in two-column formats, a special figure or table taking full text width.

teaserfigure: a special figure before `\maketitle`.

sidebar, marginfigure, margintable: in the sigchi-a format, special sidebars, tables and figures on the margin.

3. Accordingly, when scaling the images, one should use the following sizes:

- (a) For figure in one-column mode, figure* in two-column mode or teaserfigure—`\textwidth` (in the one-column you can also use `\columnwidth`, which coincides with `\textwidth` in this case).
- (b) For figure in two-column mode—`\columnwidth`.
- (c) For marginfigure—`\marginparwidth`.
- (d) For figure* in SIGCHI Extended abstracts—`\fulltextwidth`.

It is strongly recommended to use the package `booktabs` [6] and follow its main principles of typography with respect to tables:

- 1. Never, ever use vertical rules.
- 2. Never use double rules.

It is also a good idea not to overuse horizontal rules.

For table *footnotes* you have several options described in TeX FAQ [1]. The simplest one is to use `\minipage` environment:

```
\begin{table}
\caption{Simulation Configuration}
\label{tab:conf}
\begin{minipage}{\columnwidth}
\begin{center}
\begin{tabular}{ll}
\toprule
TERRAIN\footnote{This is a table footnote. This is a
table footnote. This is a table footnote.} &
(200\,m$\times$200\,m) Square\\
Node Number & 289\\
Node Placement & Uniform\\
Application & Many-to-Many/Gossip CBR Streams\\
Payload Size & 32 bytes\\
Routing Layer & GF\\
MAC Layer & CSMA/MMSN\\
Radio Layer & RADIO-ACCNOISE\\
Radio Bandwidth & 250Kbps\\
Radio Range & 20m--45m\\
\bottomrule
\end{tabular}
\end{center}
\bigskip
\footnotesize\emph{Source:} This is a table
sourcenote. This is a table sourcenote. This is a table
sourcenote.

\emph{Note:} This is a table footnote.
\end{minipage}
\end{table}
```

sidebar
marginfigure
margintable

SIGCHI extended abstract extensively uses margin space. The package provides three environments for this with option captions:

sidebar: textual information on the margin

marginfigure: a figure on the margin

margintable: a table on the margin

Tables and figures (including margin tables and margin figures) are by default centered. However, in some cases (for example, when you use several subimages per figure) you may need to override this decision. A good way to do so is to put the contents into a `\minipage` of the width `\columnwidth`.

2.6 Theorems

ACM classes define two theorem styles and several pre-defined theorem environments:

acmplain: this is the style used for theorem, conjecture, proposition, lemma, and corollary, and

acmdefinition: this is the style used for example and definition.

These definitions are in the separate style file `acmthm.sty`, which is loaded by default. However, sometimes the user might want to delay loading this package, for example, if she wants to load package like `cleveref` first. In this case use the option `acmthm=false` in the preamble, for example,

```
\documentclass[acmsmall, acmthm=false]{acmart}
\usepackage{cleveref}
\usepackage{acmthm}
```

2.7 Online-only and offline-only material

printonly
screenonly

Some supplementary material in ACM publication is put online, but not in the printed version. The text inside the environment `screenonly` will be typeset only when the option `screen` (see Section 2.2) is set to true. Conversely, the text inside the environment `printonly` is typeset only when this option is set to false. For example

```
\section{Supplementary materials}

\begin{printonly}
  This section is included in the online version of the paper.
\end{printonly}

\begin{screenonly}
  (The actual section).
\end{screenonly}
```

We use *comment* package for typesetting this code, so `\begin` and `\end` should start at the first positions of the lines of their own (no initial spaces etc.).

2.8 Note about anonymous mode

`anonsuppress` When the option `anonymous` is selected, \TeX suppresses author information (including number of authors) for a blind review. However, sometimes the information identifying the authors may be present in the body of the paper

```
\begin{anonsuppress}
  This is the continuation of the previous work by the author
  \cite{prev1, prev2}.
\end{anonsuppress}
```

As for `printonly` and `screenonly` environments, `\begin{anonsuppress}` and `\end{anonsuppress}` should start the line of their own (no leading or trailing spaces).

2.9 Acknowledgments

The traditional “Acknowledgments” section is conventionally used to thank persons and granting agencies for their help and support. However, there are several important considerations about this section.

First, in the anonymous mode this section must be omitted: it gives too much information to the reviewers. Second, the data about the grants is extracted and stored separately by the postprocessing software. ACM classes provide facilities for both these tasks.

`acks` The environment `acks` starts an unnumbered section “Acknowledgments” unless the anonymous mode is chosen. Put all thanks inside this environment.

As for `printonly` and `screenonly` environments, `\begin{acks}` and `\end{acks}` should start the line of their own (no leading or trailing spaces).

`\grantsponsor` All the financial support *must* be listed using the commands `\grantsponsor` and
`\grantnum` `\grantnum`. These commands tell the postprocessing software about the granting organization and the grant. The format of the command is the following:

```
\grantsponsor{\<sponsorID>}{\<name>}{\<url>}
\grantnum[\<url>]{\<sponsorID>}{\<number>}.
```

Here `{\<sponsorID>}` is the unique ID used to match grants to sponsors, `{\<name>}` is the name of the sponsor, `{\<url>}` is its URL, and `{\<number>}` is the grant number. The `{\<sponsorID>}` of the `\grantnum` command must correspond to `\sponsorID` of a `\grantsponsor` command. Some awards have their own web pages, which you can include using the optional argument of `\grantnum` command.

At present `{\<sponsorID>}` is chosen by the authors and can be an arbitrary key, in the same way the label of `\cite` is arbitrarily chosen. There might be a change to this policy if ACM decides to create a global database of sponsoring organizations.

Example:

```
\begin{acks}
  The authors would like to thank Dr. Yuhua Li for providing the
  matlab code of the \textit{BEPS} method.
```

The authors would also like to thank the anonymous referees for their valuable comments and helpful suggestions. The work is supported by the \grantsponsor{GS501100001809}{National Natural Science Foundation of China}{https://doi.org/10.13039/501100001809} under Grant No.:~\grantnum{GS501100001809}{61273304} and~\grantnum[http://www.nnsf.cn/youngscientsts]{GS501100001809}{Young Scientists' Support Program}.

\end{acks}

2.10 Bibliography

ACM uses the *natbib* package for formatting references and the style `ACM-Reference-Format.bst` for Bib_{TeX} processing. You may disable loading of *natbib* by using the option `natbib=false` in `\documentclass`. However, it is not recommended, as well as the use of Bib_{TeX} styles other than `ACM-Reference-Format.bst`, and may delay the processing of the manuscript.

\citestyle If you use *natbib*, you can select one of two predefined citation styles: the author-year format `acmauthoryear` or the numeric format `acmnumeric` using the command `\citestyle`, for example,

\citestyle{acmauthoryear}

Note that numeric citations are the default mode for most formats.

\setcitestyle You may further customize *natbib* using `\setcitestyle` command, for example,

\setcitestyle{numbers,sort&compress}

If you use *natbib*, then commands like `\citep` and `\citeauthor` are automatically supported. The command `\shortcite` is the same as `\cite` in numerical mode, and cites the year in the author-date mode.

There are several customized Bib_{TeX} entries and fields in ACM style `ACM-Reference-Format.bst` you may want to be aware of.

The style supports fields `doi` and `url`, for example,

doi = "10.1145/1188913.1188915",
url = "http://ccrma.stanford.edu/~jos/bayes/bayes.pdf",

The style supports arXiv recommended fields `eprint` and (optionally) `primaryclass`, for example,

eprint = "960935712",
primaryclass = "cs",

See the examples at <http://arxiv.org/hypertex/bibstyles/>.

There are special entries online and game for Web pages and games, for example,

```
@online{Thornburg01,
  author =      "Harry Thornburg",
  year =       "2001",
  title =      "Introduction to Bayesian Statistics",
  url =        "http://ccrma.stanford.edu/~jos/bayes/bayes.html",
  month =      mar,
  lastaccessed = "March 2, 2005",
}
```

For these entries you can use the lastaccessed field to add the access date to the URL.

There are two ways to enter video and audio sources in the bibliography corresponding to two different possibilities. For standalone sources available on WWW you can use an online entry, setting there howpublished field, for example,

```
@online{Obama08,
  author =      "Barack Obama",
  year =       "2008",
  title =      "A more perfect union",
  howpublished = "Video",
  day =        "5",
  url =        "http://video.google.com/videoplay?docid=6528042696351994555",
  month =      mar,
  lastaccessed = "March 21, 2008",
}
```

For the sources available as attachments to conference proceedings and similar documents, you can use the usual inproceedings entry, again setting the howpublished field:

```
@inproceedings{Novak03,
  author =      "Dave Novak",
  title =      "Solder man",
  booktitle =   "ACM SIGGRAPH 2003 Video Review on Animation theater Program",
  year =       "2003",
  publisher =   "ACM Press",
  address =     "New York, NY",
  pages =      "4",
  month =      "March 21, 2008",
  doi =        "10.9999/woot07-S422",
  howpublished = "Video",
}
```

Sometimes you need to cite a complete issue of a journal. The entry periodical is intended for this:

```
@periodical{JCohen96,
  key =      "Cohen",
  editor =   "Jacques Cohen",
  title =    "Special issue: Digital Libraries",
  journal =  "Communications of the {ACM}",
  volume =   "39",
  number =   "11",
  month =    nov,
  year =     "1996",
}
```

If you do not know the year of publication, the style will add “[n. d.]” (for “no date”) entry.

If you do not know the author (this is often the case for online entries), use key field to add a key for sorting and citations, for example,

```
@online{TUGInstmem,
  key =      {TUG},
  year =     2017,
  title =    "Institutional members of the {\TeX} Users Group",
  url =      "http://wwtug.org/instmem.html",
  lastaccessed = "May 27, 2017",
}
```

2.11 Colors

While printed ACM publications are usually black and white, screen mode allows the use of colors. The ACM classes pre-define several colors according to [7]: ACMBLue, ACMYellow, ACMOrange, ACMRed, ACMLightBlue, ACMGreen, ACMPurple, ACMDarkBlue. You can use them in the color assignments.

ACM provides the following recommendation on color use.

The most accessible approach would be to ensure that your article is still readable when printed in greyscale. The most notable reasons for this are:

1. The most common type of inherited Color Vision Deficiency (CVD) is red-green (in which similar-brightness colors that only differ in their amounts of red or green are often confused), and it affects up to 8% of males and 0.5% of females of Northern European descent.
2. The most common type of acquired Color Vision Deficiency (CVD) is blue-yellow (including mild cases for many older adults).
3. Most printing is in Black & White.
4. Situational impairments (e.g., bright sunlight shining on a mobile screen) tend to reduce the entire color gamut, reducing color discriminability.

Note: It is *not* safe to encode information using only variations in color (i.e., only differences in hue and/or saturation), as there is bound to be someone affected!

To ensure that you are using the most accessible colors, ACM recommends that you choose sets of colors to help ensure suitable variations in Black & White using either of the following tools:

1. ColourBrewer: <http://colorbrewer2.org/>
2. ACE: The Accessible Colour Evaluator: <http://daprlab.com/ace/> for designing WCAG 2.0 compliant palettes.

2.12 Other notable packages and typographic remarks

Several other packages are recommended for specialized tasks.

The package *subcaption* [8] is recommended for complex figures with several subplots or subfigures that require separate subcaptioning. The packages *nomencl* [9] and *glossaries* [10] can be used for the automatic creation of the lists of symbols and concepts used.

By default `acmart` prevents all widows and orphans (i.e. lonely lines at the beginning and the end of the page) and hyphenation at the end of the page. This is done by rather strict settings

```
\widowpenalty=10000
\clubpenalty=10000
\brokenpenalty=10000
```

However, this may lead to frustrating results when the authors must obey a page limit. Setting these penalties to smaller values may help if you absolutely need to.

Another problem might be the too strict line breaking rules. Again, a strategically placed `\sloppy` command or putting the problematic paragraph inside `sloppypar` environment might help—but beware the results might be, well, sloppy.

Note that the uppercasing in section titles is done using *textcase* package [11], so command `\NoCaseChange` inside title may help to prevent extraneous uppercasing.

2.13 A note for wizards: `acmart-preload-hook.tex`

Sometimes you need to change the behavior of `acmart`. The usual way to do this is to redefine commands in the preamble. However, these definitions are executed *after* `acmart` is loaded, and certain decisions are made. This presents a number of problems.

For example, one may want to use `titletoc` package with `acmart`. This package should be loaded before `hyperref`. However, since `acmart` loads `hyperref` itself, the line `\usepackage{titletoc}` in the preamble will lead to grief (see <http://tex.stackexchange.com/questions/357265/using-titletoc-with-acm-acmart-style>).

Another example is passing options to package. Suppose you want to use `dvipsnames` option of `xcolor` package. Normally you cannot do this because `acmart` loads this package itself without options.

The file `acmart-preload-hook.tex` may be used to solve these problems. If this file exists, it will be processed before any other package. You can use this file to load packages or pass options to them. For example, if you put in this file

```
\let\LoadClassOrig\LoadClass
\renewcommand\LoadClass[2][\LoadClassOrig[#1]{#2}%
\usepackage{titletoc}}
```

then `titletoc` will be loaded before `hyperref`. If you put in this file

```
\PassOptionsToPackage{dvipsnames}{xcolor}
```

you will pass `dvipsnames` to `xcolor`.

Important note. This hook makes it too easy to create a manuscript which is not acceptable by ACM. Even easier it is to create a file which cannot be compiled. So please do not use it *unless you know what you are doing*. And if you use it, *do not ask for support*. If you decided to use this hook, you are on your own.

3 Implementation

3.1 Identification

We start with the declaration who we are. Most .dtx files put driver code in a separate driver file .drv. We roll this code into the main file, and use the pseudo-guard <gobble> for it.

```
1 <class>\NeedsTeXFormat{LaTeX2e}
2 <*gobble>
3 \ProvidesFile{acmart.dtx}
4 </gobble>
5 <class>\ProvidesClass{acmart}
6 <acmthm>\ProvidesPackage{acmthm}
7 [2017/08/15 v1.45 Typesetting articles for Association of
8 Computing Machinery]
```

And the driver code:

```
9 <*gobble>
10 \documentclass{ltxdoc}
11 \usepackage{array,booktabs,amsmath,graphicx,fancyvrb,tabularx}
12 \usepackage[tt=false, type1=true]{libertine}
13 \usepackage[varqu]{zi4}
14 \usepackage[libertine]{newtxmath}
15 \usepackage[tableposition=top]{caption}
16 \usepackage{hypdoc}
17 \PageIndex
18 \CodelineIndex
19 \RecordChanges
20 \EnableCrossrefs
21 \begin{document}
22   \DocInput{acmart.dtx}
23 \end{document}
24 </gobble>
25 <*class>
26 \def\@classname{acmart}
```

3.2 Preload

We preload acmart-preload-hook:

```
27 \InputIfFileExists{acmart-preload-hook.tex}{%
28   \ClassWarning{\@classname}{%
29     I am loading acmart-preload-hook.tex. You are fully responsible
30     for any problems from now on.}}{}
```

3.3 Options

We need xkeyval since some of our options may have values:

```
31 \RequirePackage{xkeyval}
```

We use xstring to check whether user input is integer

```
32 \RequirePackage{xstring}
```

format The possible formats

```
33 \define@choicekey*+{acmart.cls}{format}[\ACM@format\ACM@format@nr]{%
34 manuscript, acmsmall, acmlarge, acmtog, sigconf, siggraph,
35 sigplan, sigchi, sigchi-a}[manuscript]{}{%
36 \ClassError{\@classname}{The option format must be manuscript,
37 acmsmall, acmlarge, acmtog, sigconf, siggraph,
38 sigplan, sigchi or sigchi-a}}
39 \def\@DeclareACMFormat#1{\DeclareOptionX{#1}{\setkeys{acmart.cls}{format=#1}}}
40 \@DeclareACMFormat{manuscript}
41 \@DeclareACMFormat{acmsmall}
42 \@DeclareACMFormat{acmlarge}
43 \@DeclareACMFormat{acmtog}
44 \@DeclareACMFormat{sigconf}
45 \@DeclareACMFormat{siggraph}
46 \@DeclareACMFormat{sigplan}
47 \@DeclareACMFormat{sigchi}
48 \@DeclareACMFormat{sigchi-a}
49 \ExecuteOptionsX{format}
```

\if@ACM@screen Whether we use screen mode

```
50 \define@boolkey+{acmart.cls}[\ACM@]{screen}[true]{%
51 \if@ACM@screen
52 \PackageInfo{\@classname}{Using screen mode}%
53 \else
54 \PackageInfo{\@classname}{Not using screen mode}%
55 \fi}{\PackageError{\@classname}{Option screen can be either true or
56 false}}
57 \ExecuteOptionsX{screen=false}
```

\if@ACM@acmthm Whether we load acmthm

```
58 \define@boolkey+{acmart.cls}[\ACM@]{acmthm}[true]{%
59 \if@ACM@acmthm
60 \PackageInfo{\@classname}{Requiring acmthm}%
61 \else
62 \PackageInfo{\@classname}{Suppressing acmthm}%
63 \fi}{\PackageError{\@classname}{Option acmthm can be either true or
64 false}}
65 \ExecuteOptionsX{acmthm=true}
```

\if@ACM@review Whether we use review mode

```
66 \define@boolkey+{acmart.cls}[\ACM@]{review}[true]{%
67 \if@ACM@review
68 \PackageInfo{\@classname}{Using review mode}%
69 \else
70 \PackageInfo{\@classname}{Not using review mode}%
71 \fi}{\PackageError{\@classname}{Option review can be either true or
```

```

72     false}}
73 \ExecuteOptionsX{review=false}

\if@ACM@authorversion Whether we use author's version
74 \define@boolkey+{acmart.cls}[@ACM@]{authorversion}[true]{%
75   \if@ACM@authorversion
76     \PackageInfo{\@classname}{Using authorversion mode}%
77   \else
78     \PackageInfo{\@classname}{Not using authorversion mode}%
79   \fi}{\PackageError{\@classname}{Option authorversion can be either true or
80     false}}
81 \ExecuteOptionsX{authorversion=false}

\if@ACM@natbib@override
  \if@ACM@natbib Whether we use natbib mode
82 \define@boolkey+{acmart.cls}[@ACM@]{natbib}[true]{%
83   \if@ACM@natbib
84     \PackageInfo{\@classname}{Explicitly selecting natbib mode}%
85   \else
86     \PackageInfo{\@classname}{Explicitly deselecting natbib mode}%
87   \fi}{\PackageError{\@classname}{Option natbib can be either true or
88     false}}
89 \ExecuteOptionsX{natbib=true}

  \if@ACM@anonymous Whether we use anonymous mode
90 \define@boolkey+{acmart.cls}[@ACM@]{anonymous}[true]{%
91   \if@ACM@anonymous
92     \PackageInfo{\@classname}{Using anonymous mode}%
93   \else
94     \PackageInfo{\@classname}{Not using anonymous mode}%
95   \fi}{\PackageError{\@classname}{Option anonymous can be either true or
96     false}}
97 \ExecuteOptionsX{anonymous=false}

  \if@ACM@timestamp Whether we use timestamp mode
98 \define@boolkey+{acmart.cls}[@ACM@]{timestamp}[true]{%
99   \if@ACM@timestamp
100     \PackageInfo{\@classname}{Using timestamp mode}%
101   \else
102     \PackageInfo{\@classname}{Not using timestamp mode}%
103   \fi}{\PackageError{\@classname}{Option timestamp can be either true or
104     false}}
105 \ExecuteOptionsX{timestamp=false}

  \if@ACM@authordraft Whether we use authordraft mode
106 \define@boolkey+{acmart.cls}[@ACM@]{authordraft}[true]{%
107   \if@ACM@authordraft
108     \PackageInfo{\@classname}{Using authordraft mode}%

```

```

109 \ACM@timestamptrue
110 \ACM@reviewtrue
111 \else
112 \PackageInfo{\@classname}{Not using authordraft mode}%
113 \fi}{\PackageError{\@classname}{Option authordraft can be either true or
114 false}}
115 \ExecuteOptionsX{authordraft=false}

```

\ACM@fontsize The font size to pass to the base class

```

116 \def\ACM@fontsize{}
117 \DeclareOptionX{9pt}{\edef\ACM@fontsize{\CurrentOption}}
118 \DeclareOptionX{10pt}{\edef\ACM@fontsize{\CurrentOption}}
119 \DeclareOptionX{11pt}{\edef\ACM@fontsize{\CurrentOption}}
120 \DeclareOptionX{12pt}{\edef\ACM@fontsize{\CurrentOption}}

121 \DeclareOptionX{draft}{\PassOptionsToClass{\CurrentOption}{amsart}}
122 \DeclareOptionX{*}{\PassOptionsToClass{\CurrentOption}{amsart}}
123 \ProcessOptionsX
124 \ClassInfo{\@classname}{Using format \ACM@format, number \ACM@format@nr}

```

3.4 Setting switches

\if@ACM@manuscript Whether we use manuscript mode

```
125 \newif\if@ACM@manuscript
```

\if@ACM@journal There are two kinds of publications: journals and books

```
126 \newif\if@ACM@journal
```

\if@ACM@sigchiamode The formatting of SIGCHI abstracts is quite unusual. We have a special switch for them.

```
127 \newif\if@ACM@sigchiamode
```

Setting up switches

```

128 \ifnum\ACM@format@nr=5\relax % siggraph
129 \ClassWarning{\@classname}{The format ‘siggraph’ is now obsolete.
130 I am switching to sigconf.}
131 \setkeys{acmart.cls}{format=sigconf}
132 \fi
133 \ifnum\ACM@format@nr=0\relax
134 \ACM@manuscripttrue
135 \else
136 \ACM@manuscriptfalse
137 \fi
138 \ACM@sigchiamodefalse
139 \ifcase\ACM@format@nr
140 \relax % manuscript
141 \ACM@journaltrue
142 \or % acmsmall
143 \ACM@journaltrue

```

```

144 \or % acmlarge
145 \ACM@journaltrue
146 \or % acmtog
147 \ACM@journaltrue
148 \or % sigconf
149 \ACM@journalfalse
150 \or % siggraph
151 \ACM@journalfalse
152 \or % sigplan
153 \ACM@journalfalse
154 \or % sigchi
155 \ACM@journalfalse
156 \or % sigchi-a
157 \ACM@journalfalse
158 \ACM@sigchiamodetrue
159 \fi

```

3.5 Loading base class and package

At this point we either have \ACM@fontsize, or use defaults

```

160 \ifx\ACM@fontsize\empty
161 \ifcase\ACM@format@nr
162 \relax % manuscript
163 \def\ACM@fontsize{9pt}%
164 \or % acmsmall
165 \def\ACM@fontsize{10pt}%
166 \or % acmlarge
167 \def\ACM@fontsize{10pt}%
168 \or % acmtog
169 \def\ACM@fontsize{9pt}%
170 \or % sigconf
171 \def\ACM@fontsize{9pt}%
172 \or % siggraph
173 \def\ACM@fontsize{9pt}%
174 \or % sigplan
175 \def\ACM@fontsize{10pt}%
176 \or % sigchi
177 \def\ACM@fontsize{10pt}%
178 \or % sigchi-a
179 \def\ACM@fontsize{10pt}%
180 \fi
181 \fi
182 \ClassInfo{\@classname}{Using fontsize \ACM@fontsize}
183 \LoadClass[\ACM@fontsize, reqno]{amsart}
184 \RequirePackage{microtype}

```

We need totpages package to calculate the number of pages and refcount to use the number

```

185 \RequirePackage{refcount}
186 \RequirePackage{totpages}

```

The `amsmath \collect@body` is defined using `\def`. We load `environ` to access the `\long` version of the command

```
187 \RequirePackage{environ}
```

We use `setspace` for doublespacing

```
188 \if@ACM@manuscript
```

```
189 \RequirePackage{setspace}
```

```
190 \onehalfspacing
```

```
191 \fi
```

We need `textcase` for better upcasing

```
192 \RequirePackage{textcase}
```

Citations. We patch `\setcitestyle` to allow, e.g., `\setcitestyle{sort}` and `\setcitestyle{nosort}`. We patch `\citestyle` to warn about undefined citation styles.

```
193 \if@ACM@natbib
```

```
194 \RequirePackage{natbib}
```

```
195 \renewcommand{\bibsection}{%
```

```
196 \section*{\refname}%
```

```
197 \phantomsection\addcontentsline{toc}{section}{\refname}%
```

```
198 }
```

```
199 \renewcommand{\bibfont}{\bibliofont}
```

```
200 \renewcommand{\setcitestyle}[1]{
```

```
201 \@for\@tempa:=#1\do
```

```
202 {\def\@tempb{round}\ifx\@tempa\@tempb
```

```
203 \renewcommand\NAT@open{(\}\renewcommand\NAT@close{)}\fi
```

```
204 \def\@tempb{square}\ifx\@tempa\@tempb
```

```
205 \renewcommand\NAT@open{[\}\renewcommand\NAT@close{]}\fi
```

```
206 \def\@tempb{angle}\ifx\@tempa\@tempb
```

```
207 \renewcommand\NAT@open{$<$}\renewcommand\NAT@close{$>$}\fi
```

```
208 \def\@tempb{curly}\ifx\@tempa\@tempb
```

```
209 \renewcommand\NAT@open{\{\}\renewcommand\NAT@close{\}}\fi
```

```
210 \def\@tempb{semicolon}\ifx\@tempa\@tempb
```

```
211 \renewcommand\NAT@sep{;}\fi
```

```
212 \def\@tempb{colon}\ifx\@tempa\@tempb
```

```
213 \renewcommand\NAT@sep{;}\fi
```

```
214 \def\@tempb{comma}\ifx\@tempa\@tempb
```

```
215 \renewcommand\NAT@sep{,}\fi
```

```
216 \def\@tempb{authoryear}\ifx\@tempa\@tempb
```

```
217 \NAT@numbersfalse\fi
```

```
218 \def\@tempb{numbers}\ifx\@tempa\@tempb
```

```
219 \NAT@numberstrue\NAT@superfalse\fi
```

```
220 \def\@tempb{super}\ifx\@tempa\@tempb
```

```
221 \NAT@numberstrue\NAT@supertrue\fi
```

```
222 \def\@tempb{nobibstyle}\ifx\@tempa\@tempb
```

```
223 \let\bibstyle=\@gobble\fi
```

```
224 \def\@tempb{bibstyle}\ifx\@tempa\@tempb
```

```
225 \let\bibstyle=\@citestyle\fi
```

```
226 \def\@tempb{sort}\ifx\@tempa\@tempb
```

```

227 \def\NAT@sort{\@ne}\fi
228 \def\@tempb{nosort}\ifx\@tempa\@tempb
229 \def\NAT@sort{\@z}\fi
230 \def\@tempb{compress}\ifx\@tempa\@tempb
231 \def\NAT@cmprs{\@ne}\fi
232 \def\@tempb{nocompress}\ifx\@tempa\@tempb
233 \def\NAT@cmprs{\@z}\fi
234 \def\@tempb{sort&compress}\ifx\@tempa\@tempb
235 \def\NAT@sort{\@ne}\def\NAT@cmprs{\@ne}\fi
236 \def\@tempb{mcite}\ifx\@tempa\@tempb
237 \let\NAT@merge\@ne\fi
238 \def\@tempb{merge}\ifx\@tempa\@tempb
239 \ifnum{\NAT@merge<\tw}\let\NAT@merge\tw{}\fi
240 \def\@tempb{elide}\ifx\@tempa\@tempb
241 \ifnum{\NAT@merge<\thr}\let\NAT@merge\thr{}\fi
242 \def\@tempb{longnamesfirst}\ifx\@tempa\@tempb
243 \NAT@longnamestrue\fi
244 \def\@tempb{nonamebreak}\ifx\@tempa\@tempb
245 \def\NAT@nmfmt#1{\mbox{\NAT@up#1}}\fi
246 \expandafter\NAT@find@eq\@tempa=\relax\@nil
247 \if\@tempc\relax\else
248 \expandafter\NAT@rem@eq\@tempc
249 \def\@tempb{open}\ifx\@tempa\@tempb
250 \xdef\NAT@open{\@tempc}\fi
251 \def\@tempb{close}\ifx\@tempa\@tempb
252 \xdef\NAT@close{\@tempc}\fi
253 \def\@tempb{aysep}\ifx\@tempa\@tempb
254 \xdef\NAT@aysep{\@tempc}\fi
255 \def\@tempb{yysep}\ifx\@tempa\@tempb
256 \xdef\NAT@yrsep{\@tempc}\fi
257 \def\@tempb{notesep}\ifx\@tempa\@tempb
258 \xdef\NAT@cmt{\@tempc}\fi
259 \def\@tempb{citesep}\ifx\@tempa\@tempb
260 \xdef\NAT@sep{\@tempc}\fi
261 \fi
262 }%
263 \NAT@@setcites
264 }
265 \renewcommand\citestyle[1]{%
266 \ifcsname bibstyle@#1\endcsname%
267 \csname bibstyle@#1\endcsname\let\bibstyle\@gobble%
268 \else%
269 \@latex@error{Undefined ‘#1’ citestyle}%
270 \fi
271 }%
272 \fi

```

\bibstyle@acmauthoryear The default author-year format:

```

273 \newcommand{\bibstyle@acmauthoryear}{%
274 \setcitestyle{%

```

```

275   authoryear,%
276   open={},close={},citesep={;},%
277   aysep={},yysep={},,%
278   notesep={, }}

```

`\bibstyle@acmnumeric` The default numeric format:

```

279 \newcommand{\bibstyle@acmnumeric}{%
280   \setcitestyle{%
281     numbers,sort&compress,%
282     open={},close={},citesep={},,%
283     notesep={, }}

```

The default is numeric:

```

284 \if@ACM@natbib
285 \citestyle{acmnumeric}
286 \fi

```

`\@startsection` Before we call `hyperref`, we redefine `\startsection` commands to their \LaTeX defaults, since `amsart` ones are too AMS-specific. We need to do this early since we want `hyperref` to have a chance to redefine them again:

```

287 \def\@startsection#1#2#3#4#5#6{%
288   \if@noskipsec \leavevmode \fi
289   \par
290   \@tempskipa #4\relax
291   \@afterindenttrue
292   \ifdim \@tempskipa <\z@
293     \@tempskipa -\@tempskipa \@afterindentfalse
294   \fi
295   \if@nobreak
296     \everypar{%
297       \else
298         \addpenalty\@secpenalty\addvspace\@tempskipa
299       \fi
300     \@ifstar
301       {\@ssect{#3}{#4}{#5}{#6}}%
302       {\@dblarg{\@sect{#1}{#2}{#3}{#4}{#5}{#6}}}
303 \def\@sect#1#2#3#4#5#6[#7]#8{%
304   \edef\@toclevel{\ifnum#2=\@m 0\else\number#2\fi}%
305   \ifnum #2>\c@secnumdepth
306     \let\@svsec\@empty
307   \else
308     \refstepcounter{#1}%
309     \protected@edef\@svsec{\@secntformat{#1}\relax}%
310   \fi
311   \@tempskipa #5\relax
312   \ifdim \@tempskipa>\z@
313     \begingroup
314       #6{%
315         \@hangfrom{\hskip #3\relax\@svsec}%

```

```

316         \interlinepenalty \@M #8\@par}%
317     \endgroup
318     \csname #1mark\endcsname{#7}%
319     \ifnum #2>\c@secnumdepth \else
320         \@tochangmeasure{\csname the#1\endcsname}%
321     \fi
322     \addcontentsline{toc}{#1}{%
323         \ifnum #2>\c@secnumdepth \else
324             \protect\numberline{\csname the#1\endcsname}%
325         \fi
326         #7}%
327 \else
328     \def\@svsechd{%
329         #6{\hspace #3\relax
330             \@svsec #8}%
331         \csname #1mark\endcsname{#7}%
332         \ifnum #2>\c@secnumdepth \else
333             \@tochangmeasure{\csname the#1\endcsname\space}%
334         \fi
335         \addcontentsline{toc}{#1}{%
336             \ifnum #2>\c@secnumdepth \else
337                 \protect\numberline{\csname the#1\endcsname}%
338             \fi
339             #7}}%
340 \fi
341 \xsect{#5}}
342 \def\xsect#1{%
343     \@tempskipa #1\relax
344     \ifdim \@tempskipa>\z@
345         \par \nobreak
346         \vskip \@tempskipa
347         \afterheading
348     \else
349         \@nobreakfalse
350         \global\@noskipsectrue
351         \everypar{%
352             \if@noskipsec
353                 \global\@noskipsecfalse
354                 {\setbox\z@\lastbox}%
355                 \clubpenalty\@M
356                 \begingroup \@svsechd \endgroup
357                 \unskip
358                 \@tempskipa #1\relax
359                 \hspace -\@tempskipa
360             \else
361                 \clubpenalty \@clubpenalty
362             \everypar{}%
363         \fi}%
364 \fi
365 \ignorespaces}

```

```

366 \def\@secntformat#1{\csname the#1\endcsname\quad}
367 \def\@essect#1#2#3#4#5{%
368   \@tempskipa #3\relax
369   \ifdim \@tempskipa>\z@
370     \begingroup
371       #4{%
372         \@hangfrom{\hspace #1}%
373         \interlinepenalty \@M #5\@par}%
374     \endgroup
375   \else
376     \def\@svsechd{#4\hspace #1\relax #5}}%
377   \fi
378   \@xsect{#3}}

```

\@startsection Amsart redefines \@startsection. Here we redefine it again to make TOC working

```

379 \def\@starttoc#1#2{\begingroup\makeatletter
380   \setTrue{#1}%
381   \par\removelastskip\vskip\z@skip
382   \@startsection{section}\@M\z@{\linespacing\@plus\linespacing}%
383     {.5\linespacing}{\centering\contentsnamefont}{#2}%
384   \@input{\jobname.#1}%
385   \if@filesw
386     \xp\newwrite\csname tf@#1\endcsname
387     \immediate\xp\openout\csname tf@#1\endcsname \jobname.#1\relax
388   \fi
389   \global\@nobreakfalse \endgroup
390   \addvspace{32\p@\@plus14\p@}%
391 }

```

\l@section Section spacing is more generous than for amsart

```

392 \def\l@section{\@tocline{1}{0pt}{1pc}{2pc}{}}

```

\l@subsection Amsart has too large spacing

```

393 \def\l@subsection{\@tocline{2}{0pt}{1pc}{3pc}{}}

```

\l@subsubsection Amsart has too large spacing

```

394 \def\l@subsubsection{\@tocline{2}{0pt}{1pc}{5pc}{}}

```

And hyperref

```

395 \let\@footnotemark@nolink\@footnotemark
396 \let\@footnotetext@nolink\@footnotetext
397 \RequirePackage[bookmarksnumbered,unicode]{hyperref}
398 \pdfstringdefDisableCommands{%
399   \def\unskip{}%
400   \def\textbullet{-}%
401   \def\textrightarrow{->}%
402   \def\footnotemark{}%
403 }
404 \urlstyle{rm}

```

```

405 \ifcase\ACM@format@nr
406 \relax % manuscript
407 \or % acmsmall
408 \or % acmlarge
409 \or % acmtog
410 \or % sigconf
411 \or % siggraph
412 \or % sigplan
413 \urlstyle{sf}
414 \or % sigchi
415 \or % sigchi-a
416 \urlstyle{sf}
417 \fi
418 \if@ACM@screen
419 \hypersetup{colorlinks,
420 linkcolor=ACMRed,
421 citecolor=ACMPurple,
422 urlcolor=ACMDarkBlue,
423 filecolor=ACMDarkBlue}
424 \else
425 \hypersetup{hidelinks}
426 \fi

Bibliography mangling.
427 \if@ACM@natbib
428 \let\citeN\cite
429 \let\cite\citep
430 \let\citeANP\citeauthor
431 \let\citeNN\citeyearpar
432 \let\citeyearNP\citeyear
433 \let\citeyear\citeyearpar
434 \let\citeNP\citealt
435 \DeclareRobustCommand\citeA
436 {\begingroup\NAT@swafalse
437 \let\NAT@ctype\@ne\NAT@partrue\NAT@fullfalse\NAT@open\NAT@citetp}%
438 \providecommand\newblock{}%
439 \else
440 \AtBeginDocument{%
441 \let\shortcite\cite%
442 \providecommand\citename[1]{#1}}
443 \fi
444 \newcommand\shortcite[2][{}]{%
445 \ifNAT@numbers\cite[#1]{#2}\else\citeyear[#1]{#2}\fi}

```

`\bibliographystyle` Amsart redefines `\bibliographystyle` since it prefers AMS bibliography. We turn it back to \LaTeX definition:

```

446 \def\bibliographystyle#1{%
447 \ifx\@begindocumenthook\@undefined\else
448 \expandafter\AtBeginDocument
449 \fi

```

```

450 {\if@filesw
451 \immediate\write\@auxout{\string\bibstyle{#1}}%
452 \fi}}

```

Graphics and color

```

453 \RequirePackage{graphicx, xcolor}

We define ACM colors according to [7]:

454 \definecolor[named]{ACMBlue}{cmyk}{1,0.1,0,0.1}
455 \definecolor[named]{ACMYellow}{cmyk}{0,0.16,1,0}
456 \definecolor[named]{ACMOrange}{cmyk}{0,0.42,1,0.01}
457 \definecolor[named]{ACMRed}{cmyk}{0,0.90,0.86,0}
458 \definecolor[named]{ACMLightBlue}{cmyk}{0.49,0.01,0,0}
459 \definecolor[named]{ACMGreen}{cmyk}{0.20,0,1,0.19}
460 \definecolor[named]{ACMPurple}{cmyk}{0.55,1,0,0.15}
461 \definecolor[named]{ACMDarkBlue}{cmyk}{1,0.58,0,0.21}

```

Author draft mode

```

462 \if@ACM@authordraft
463 \RequirePackage{draftwatermark}
464 \SetWatermarkFontSize{0.5in}
465 \SetWatermarkColor[gray]{.9}
466 \SetWatermarkText{\parbox{12em}{\centering
467 Unpublished working draft\
468 Not for distribution}}
469 \fi

```

3.6 Paper size and paragraphing

We use geometry for dimensions. Note the presently margins do not depend on the font size option - maybe we will need to change this. See <https://github.com/borisveytsman/acmart/issues/5#issuecomment-272881329>.

```

470 \RequirePackage{geometry}
471 \ifcase\ACM@format@nr
472 \relax % manuscript
473 \geometry{letterpaper,head=13pt,
474 marginparwidth=6pc,heightrounded}%
475 \or % acmsmall
476 \geometry{twoside=true,
477 includeheadfoot, head=13pt, foot=2pc,
478 paperwidth=6.75in, paperheight=10in,
479 top=58pt, bottom=44pt, inner=46pt, outer=46pt,
480 marginparwidth=2pc,heightrounded
481 }%
482 \or % acmlarge
483 \geometry{twoside=true, head=13pt, foot=2pc,
484 paperwidth=8.5in, paperheight=11in,
485 includeheadfoot,
486 top=78pt, bottom=114pt, inner=81pt, outer=81pt,
487 marginparwidth=4pc,heightrounded

```

```

488 }%
489 \or % acmtog
490 \geometry{twoside=true, head=13pt, foot=2pc,
491   paperwidth=8.5in, paperheight=11in,
492   includeheadfoot, columnsep=24pt,
493   top=52pt, bottom=75pt, inner=52pt, outer=52pt,
494   marginparwidth=2pc,heightrounded
495 }%
496 \or % sigconf
497 \geometry{twoside=true, head=13pt,
498   paperwidth=8.5in, paperheight=11in,
499   includeheadfoot, columnsep=2pc,
500   top=57pt, bottom=73pt, inner=54pt, outer=54pt,
501   marginparwidth=2pc,heightrounded
502 }%
503 \or % siggraph
504 \geometry{twoside=true, head=13pt,
505   paperwidth=8.5in, paperheight=11in,
506   includeheadfoot, columnsep=2pc,
507   top=57pt, bottom=73pt, inner=54pt, outer=54pt,
508   marginparwidth=2pc,heightrounded
509 }%
510 \or % sigplan
511 \geometry{twoside=true, head=13pt,
512   paperwidth=8.5in, paperheight=11in,
513   includeheadfoot=false, columnsep=2pc,
514   top=1in, bottom=1in, inner=0.75in, outer=0.75in,
515   marginparwidth=2pc,heightrounded
516 }%
517 \or % sigchi
518 \geometry{twoside=true, head=13pt,
519   paperwidth=8.5in, paperheight=11in,
520   includeheadfoot, columnsep=2pc,
521   top=66pt, bottom=73pt, inner=54pt, outer=54pt,
522   marginparwidth=2pc,heightrounded
523 }%
524 \or % sigchi-a
525 \geometry{twoside=false, head=13pt,
526   paperwidth=11in, paperheight=8.5in,
527   includeheadfoot, marginparsep=72pt,
528   marginparwidth=170pt, columnsep=20pt,
529   top=72pt, bottom=72pt, left=314pt, right=72pt
530 }%
531 \@mparswitchfalse
532 \reversemarginpar
533 \fi

```

\parindent Paragraphing

```

\parskip 534 \setlength\parindent{10\p@}
535 \setlength\parskip{\z@}

```

```

536 \ifcase\ACM@format@nr
537 \relax % manuscript
538 \or % acmsmall
539 \or % acmlarge
540 \or % acmtog
541 \setlength\parindent{9\p@}%
542 \or % sigconf
543 \or % siggraph
544 \or % sigplan
545 \or % sigchi
546 \or % sigchi-a
547 \fi

```

`\normalparindent` amsart defines the `\normalparindent` length and initializes it to 12pt (the value of `\parindent` in amsart). It is later used to set the `\listparindent` length in the quotation environment and the `\parindent` length in the `\@footnotetext` command. We set `\normalparindent` to the value of `\parindent` as selected by acmart for consistent paragraph indents.

```
548 \setlength\normalparindent{\parindent}
```

Footnotes require some consideration. We have several layers of footnotes: front-matter footnotes, “regular” footnotes and the special insert for bibstrip. In the old ACM classes bibstrip was a `\@float`. The problem with floats is that they tend to, well, float—and we want the guarantee they stay.

We use *manyfoot* for layered footnotes instead.

`\copyrightpermissionfootnoterule` This is the footnote rule that separates bibstrip from the rest of the paper. It is a full width rule.

```

549 \def\copyrightpermissionfootnoterule{\kern-3\p@
550 \hrule \@width \columnwidth \kern 2.6\p@}

551 \RequirePackage{manyfoot}
552 \SelectFootnoteRule[2]{copyrightpermission}
553 \DeclareNewFootnote{copyrightpermission}

```

`\footnoterule` Tschichold’s rules:

```

554 \def\footnoterule{\kern-3\p@
555 \hrule \@width 4pc \kern 2.6\p@}

```

`\endminipage` We do not use footnote rules in minipages

```

556 \def\endminipage{%
557 \par
558 \unskip
559 \ifvoid\@mpfootins\else
560 \vskip\skip\@mpfootins
561 \normalcolor
562 \unvbox\@mpfootins
563 \fi
564 \@minipagefalse %% added 24 May 89

```

```

565 \color@endgroup
566 \egroup
567 \expandafter\@iiiparbox\@mpargs{\unvbox\@tempboxa}}

\@makefnmark We do note use indentation for footnotes
568 \def\@makefnmark{\noindent\@makefnmark}

\@footnotetext In sigchi-a mode our footnotes are on the margins!
569 \if@ACM@sigchiamode
570 \long\def\@footnotetext#1{\marginpar{%
571   \reset@font\small
572   \interlinepenalty\interfootnotelinepenalty
573   \protected@edef\@currentlabel{%
574     \csname p@footnote\endcsname\@thefnmark
575   }}%
576   \color@begingroup
577     \@makefnmark{#1}%
578     \rule{z@footnotesep\ignorespaces#1\@finalstrut\strutbox}%
579   \color@endgroup}}%
580 \fi

\@mpfootnotetext We want the footnotes in minipages centered:
581 \long\def\@mpfootnotetext#1{%
582   \global\setbox\@mpfootins\vbox{%
583     \unvbox\@mpfootins
584     \reset@font\footnotesize
585     \hsize\columnwidth
586     \@parboxrestore
587     \protected@edef\@currentlabel
588       {\csname p@mpfootnote\endcsname\@thefnmark}%
589     \color@begingroup\centering
590       \@makefnmark{#1}%
591       \rule{z@footnotesep\ignorespaces#1\@finalstrut\strutbox}%
592     \color@endgroup}}

\@makefnmark AMS classes use a buggy definition of \makefnmark. We revert to the standard one.
593 \def\@makefnmark{\hbox{\@textsuperscript{\normalfont\@thefnmark}}}}

\@textbottom Added some stretch according to David Carlisle's advice at http://tex.stackexchange.com/a/62318/5522
594 \def\@textbottom{\vskip \z@ \@plus 1pt}
595 \let\@texttop\relax

```

3.7 Fonts

Somehow PDF_TEX and XeTeX require different incantations to make PDF compliant with the current Acrobat bugs. Xpdf is much better.

The code below is by Ross Moore.

```

596 \RequirePackage{iftex}

```

```

597 \ifPDFTeX
598 \input{glyphtounicode}
599 \pdfglyphtounicode{f_f}{FB00}
600 \pdfglyphtounicode{f_f_i}{FB03}
601 \pdfglyphtounicode{f_f_l}{FB04}
602 \pdfglyphtounicode{f_i}{FB01}
603 \pdfglyphtounicode{t_t}{00740074}
604 \pdfglyphtounicode{f_t}{00660074}
605 \pdfglyphtounicode{T_h}{00540068}
606 \pdfgentounicode=1
607 \fi
608 \RequirePackage{cmap}

\if@ACM@newfonts Whether we load the new fonts
609 \newif\if@ACM@newfonts
610 \@ACM@newfontstrue
611 \IfFileExists{libertine.sty}{\ClassWarning{\@classname}{You do not
612     have libertine package installed. Please upgrade your
613     TeX}\@ACM@newfontsfalse}
614 \IfFileExists{zi4.sty}{\ClassWarning{\@classname}{You do not
615     have zi4 package installed. Please upgrade your TeX}\@ACM@newfontsfalse}
616 \IfFileExists{newtxmath.sty}{\ClassWarning{\@classname}{You do not
617     have newtxmath package installed. Please upgrade your
618     TeX}\@ACM@newfontsfalse}

    We use Libertine throughout.

619 \if@ACM@newfonts
620 \RequirePackage[tt=false, type1=true]{libertine}
621 \RequirePackage[varqu]{zi4}
622 \RequirePackage[libertine]{newtxmath}
623 \RequirePackage[T1]{fontenc}
624 \fi

    The SIGCHI extended abstracts are sans serif:

625 \if@ACM@sigchiamode
626 \renewcommand{\familydefault}{\sfdefault}
627 \fi

```

3.8 Floats

We use caption package

```

628 \RequirePackage{caption, float}
629 \captionsetup[table]{position=top}
630 \if@ACM@journal
631 \captionsetup{labelfont={sf, small},
632     textfont={sf, small}, margin=\z@}
633 \captionsetup[figure]{name={Fig.}}
634 \else
635 \captionsetup{labelfont={bf},

```

```

636     textfont={bf}, labelsep=colon, margin=\z@}
637 \ifcase\ACM@format@nr
638 \relax % manuscript
639 \or % acmsmall
640 \or % acmlarge
641 \or % acmtog
642 \or % sigconf
643 \or % siggraph
644 \captionsetup{textfont={it}}
645 \or % sigplan
646 \captionsetup{labelfont={bf},
647     textfont={normalfont}, labelsep=period, margin=\z@}
648 \or % sigchi
649 \captionsetup[figure]{labelfont={bf, small},
650     textfont={bf, small}}
651 \or % sigchi-a
652 \captionsetup[figure]{labelfont={bf, small},
653     textfont={bf, small}}
654 \fi
655 \fi

sidebar The sidebar environment:
656 \newfloat{sidebar}{}{sbar}
657 \floatname{sidebar}{Sidebar}
658 \renewenvironment{sidebar}{\Collect@Body\@sidebar}{}

\@sidebar The processing of the saved text
659 \long\def\@sidebar#1{\bgroup\captionsetup{type=sidebar}%
660     \marginpar{\small#1}\egroup}

marginfigure The marginfigure environment:
661 \newenvironment{marginfigure}{\Collect@Body\@marginfigure}{}

\@marginfigure The processing of the saved text
662 \long\def\@marginfigure#1{\bgroup\captionsetup{type=figure}%
663     \marginpar{\centering\small#1}\egroup}

margintable The margintable environment:
664 \newenvironment{margintable}{\Collect@Body\@margintable}{}

\@margintable The processing of the saved text
665 \long\def\@margintable#1{\bgroup\captionsetup{type=table}%
666     \marginpar{\centering\small#1}\egroup}

SIGCHI extended abstract provides an interesting possibility to push into the margin.
Here we use figure* and table* for this.

\fulltextwidth We define the width of the boxes as
667 \newdimen\fulltextwidth
668 \fulltextwidth=\dimexpr(\textwidth+\marginparwidth+\marginparsep)

```

```

\@dblfloat We redefine the double float command. First, we make the size bigger. Second, our
            default position is going to be tp (to give marginalia a chance)
            669 \if@ACM@sigchiamode
            670 \def\@dblfloat{\bgroup\columnwidth=\fulltextwidth
            671   \let\@endfloatbox\@endwidefloatbox
            672   \def\@fpsaddddefault{\def\@fps{tp}}}%
            673   \@float}
            674 \fi

\end@dblfloat And the end. Just adding a \bgroup.
            675 \if@ACM@sigchiamode
            676 \def\end@dblfloat{%
            677   \end@float\egroup}
            678 \fi

\@endwidefloatbox This is the end of a wide box - we basically move everything to the left
            679 \def\@endwidefloatbox{%
            680   \par\vskip\z@skip
            681   \@minipagefalse
            682   \outer@nobreak
            683   \egroup
            684   \color@endbox
            685   \global\setbox\@currbox=\vbox{\moveleft
            686     \dimexpr(\fulltextwidth-\textwidth)\box\@currbox}%
            687   \wd\@currbox=\textwidth
            688 }

```

3.9 Lists

```

689 \ifcase\ACM@format@nr
690 \relax % manuscript
691 \or % acmsmall
692 \or % acmlarge
693 \or % acmtog
694 \or % sigconf
695 \or % siggraph
696 \or % sigplan
697 \def\labelenumi{\theenumi.}
698 \def\labelenumii{\theenumii.}
699 \def\labelenumiii{\theenumiii.}
700 \def\labelenumiv{\theenumiv.}
701 \or % sigchi
702 \or % sigchi-a
703 \fi

```

AMS uses generous margins for the lists. Note that `amsart` defines `\leftmargin` values for list levels at begin document, so we must redefine them in the same manner. Also, note that `amsart` redefines `enumerate` and `itemize` environments with a `\makelabel` command that uses `\llap`, so the `\labelwidth` value is (effectively) irrelevant; nonetheless, we follow `amsart` and set `\labelwidth` to `\leftmargin` minus `\labelsep`.

```

704 \newdimen\@ACM@labelwidth
705 \AtBeginDocument{%
706   \setlength\labelsep{4pt}
707   \setlength{\@ACM@labelwidth}{6.5pt}
708
709   %% First-level list: when beginning after the first line of an
710   %% indented paragraph or ending before an indented paragraph, labels
711   %% should not hang to the left of the preceding/following text.
712   \setlength\leftmargini{\z@}
713   \addtolength\leftmargini{\parindent}
714   \addtolength\leftmargini{2\labelsep}
715   \addtolength\leftmargini{\@ACM@labelwidth}
716
717   %% Second-level and higher lists.
718   \setlength\leftmarginii{\z@}
719   \addtolength\leftmarginii{0.5\labelsep}
720   \addtolength\leftmarginii{\@ACM@labelwidth}
721   \setlength\leftmarginiii{\leftmarginii}
722   \setlength\leftmarginiv{\leftmarginiii}
723   \setlength\leftmarginv{\leftmarginiv}
724   \setlength\leftmarginvi{\leftmarginv}
725   \@listi}
726 \newskip\listisep
727 \listisep\smallskipamount
728 \def\@listI{\leftmargin\leftmargini
729   \labelwidth\leftmargini \advance\labelwidth-\labelsep
730   \listparindent\z@
731   \topsep\listisep}
732 \let\@listi\@listI
733 \def\@listii{\leftmargin\leftmarginii
734   \labelwidth\leftmarginii \advance\labelwidth-\labelsep
735   \topsep\z@skip}
736 \def\@listiii{\leftmargin\leftmarginiii
737   \labelwidth\leftmarginiii \advance\labelwidth-\labelsep}
738 \def\@listiv{\leftmargin\leftmarginiv
739   \labelwidth\leftmarginiv \advance\labelwidth-\labelsep}
740 \def\@listv{\leftmargin\leftmarginv
741   \labelwidth\leftmarginv \advance\labelwidth-\labelsep}
742 \def\@listvi{\leftmargin\leftmarginvi
743   \labelwidth\leftmarginvi \advance\labelwidth-\labelsep}
\descriptionlabel We do not use default colon as \amsart does:
744 \renewcommand{\descriptionlabel}[1]{\upshape\bfseries #1}

\description Make description environment indentation consistent with that of itemize and
enumerate environments.
745 \renewenvironment{description}{\list{}}{%
746   \labelwidth\@ACM@labelwidth
747   \let\makelabel\descriptionlabel}%
748 }{

```

```

749 \endlist
750 }
751 \let\enddescription=\endlist % for efficiency

```

3.10 Top matter data

We use keyval interface to define journal title and relevant information

```

752 \define@choicekey**{ACM}{acmJournal}[\@journalCode\@journalCode@nr]{%
753   CIE,%
754   CSUR,%
755   IMWUT,%
756   JACM,%
757   JDIQ,%
758   JEA,%
759   JERIC,%
760   JETC,%
761   JOCCH,%
762   PACMHCI,%
763   PACMPL,%
764   POMACS,%
765   TAAS,%
766   TACCESS,%
767   TACO,%
768   TALG,%
769   TALLIP,%
770   TAP,%
771   TCPS,%
772   TEAC,%
773   TECS,%
774   TIIS,%
775   TISSEC,%
776   TIST,%
777   TKDD,%
778   TMIS,%
779   TOCE,%
780   TOCHI,%
781   TOCL,%
782   TOCS,%
783   TOCT,%
784   TODAES,%
785   TODS,%
786   TOG,%
787   TOIS,%
788   TOIT,%
789   TOMACS,%
790   TOMM,%
791   TOMPECS,%
792   TOMS,%
793   TOPC,%

```

```

794 TOPS,%
795 TOPLAS,%
796 TOS,%
797 TOSEM,%
798 TOSN,%
799 TRETs,%
800 TSAS,%
801 TSC,%
802 TSLP,%
803 TWEB%
804 }{%
805 \ifcase\@journalCode@nr
806 \relax % CIE
807 \def\@journalName{ACM Computers in Entertainment}%
808 \def\@journalNameShort{ACM Comput. Entertain.}%
809 \def\@permissionCodeOne{1544-3574}%
810 \or % CSUR
811 \def\@journalName{ACM Computing Surveys}%
812 \def\@journalNameShort{ACM Comput. Surv.}%
813 \def\@permissionCodeOne{0360-0300}%
814 \or % IMWUT
815 \def\@journalName{Proceedings of the ACM on Interactive, Mobile,
816 Wearable and Ubiquitous Technologies}%
817 \def\@journalNameShort{Proc. ACM Interact. Mob. Wearable Ubiquitous Technol.}%
818 \def\@permissionCodeOne{2474-9567}%
819 \or % JACM
820 \def\@journalName{Journal of the ACM}%
821 \def\@journalNameShort{J. ACM}%
822 \def\@permissionCodeOne{0004-5411}%
823 \or % JDIQ
824 \def\@journalName{ACM Journal of Data and Information Quality}%
825 \def\@journalNameShort{ACM J. Data Inform. Quality}%
826 \def\@permissionCodeOne{1936-1955}%
827 \or % JEA
828 \def\@journalName{ACM Journal of Experimental Algorithmics}%
829 \def\@journalNameShort{ACM J. Exp. Algor.}%
830 \def\@permissionCodeOne{1084-6654}%
831 \or % JERIC
832 \def\@journalName{ACM Journal of Educational Resources in Computing}%
833 \def\@journalNameShort{ACM J. Edu. Resources in Comput.}%
834 \def\@permissionCodeOne{1073-0516}%
835 \or % JETC
836 \def\@journalName{ACM Journal on Emerging Technologies in Computing Systems}%
837 \def\@journalNameShort{ACM J. Emerg. Technol. Comput. Syst.}%
838 \def\@permissionCodeOne{1550-4832}%
839 \or % JOCCH
840 \def\@journalName{ACM Journal on Computing and Cultural Heritage}%
841 \def\@journalNameShort{ACM J. Comput. Cult. Herit.}%
842 \or % PACMHCI
843 \def\@journalName{Proceedings of the ACM on Human-Computer Interaction}%

```

```

844 \def\@journalName{Proc. ACM Hum.-Comput. Interact.}%
845 \def\@permissionCodeOne{2573-0142}%
846 \or % PACMPL
847 \def\@journalName{Proceedings of the ACM on Programming Languages}%
848 \def\@journalName{Proc. ACM Program. Lang.}%
849 \def\@permissionCodeOne{2475-1421}%
850 \or % POMACS
851 \def\@journalName{Proceedings of the ACM on Measurement and Analysis of Computing Systems}%
852 \def\@journalName{Proc. ACM Meas. Anal. Comput. Syst.}%
853 \def\@permissionCodeOne{2476-1249}%
854 \or % TAAS
855 \def\@journalName{ACM Transactions on Autonomous and Adaptive Systems}%
856 \def\@journalNameShort{ACM Trans. Autonom. Adapt. Syst.}%
857 \def\@permissionCodeOne{1556-4665}%
858 \or % TACCESS
859 \def\@journalName{ACM Transactions on Accessible Computing}%
860 \def\@journalNameShort{ACM Trans. Access. Comput.}%
861 \def\@permissionCodeOne{1936-7228}%
862 \or % TACO
863 \def\@journalName{ACM Transactions on Architecture and Code Optimization}%
864 \or % TALG
865 \def\@journalName{ACM Transactions on Algorithms}%
866 \def\@journalNameShort{ACM Trans. Algor.}%
867 \def\@permissionCodeOne{1549-6325}%
868 \or % TALLIP
869 \def\@journalName{ACM Transactions on Asian and Low-Resource Language Information Processing}%
870 \def\@journalNameShort{ACM Trans. Asian Low-Resour. Lang. Inf. Process.}%
871 \def\@permissionCodeOne{2375-4699}%
872 \or % TAP
873 \def\@journalName{ACM Transactions on Applied Perception}%
874 \or % TCPS
875 \def\@journalName{ACM Transactions on Cyber-Physical Systems}%
876 \or % TEAC
877 \def\@journalName{ACM Transactions on Economics and Computation}%
878 \or % TECS
879 \def\@journalName{ACM Transactions on Embedded Computing Systems}%
880 \def\@journalNameShort{ACM Trans. Embedd. Comput. Syst.}%
881 \def\@permissionCodeOne{1539-9087}%
882 \or % TIIS
883 \def\@journalName{ACM Transactions on Interactive Intelligent Systems}%
884 \def\@journalNameShort{ACM Trans. Interact. Intell. Syst.}%
885 \def\@permissionCodeOne{2160-6455}%
886 \or % TISSEC
887 \def\@journalName{ACM Transactions on Information and System Security}%
888 \def\@journalNameShort{ACM Trans. Info. Syst. Sec.}%
889 \def\@permissionCodeOne{1094-9224}%
890 \or % TIST
891 \def\@journalName{ACM Transactions on Intelligent Systems and Technology}%
892 \def\@journalNameShort{ACM Trans. Intell. Syst. Technol.}%
893 \def\@permissionCodeOne{2157-6904}%

```

```

894 \or % TKDD
895   \def\@journalName{ACM Transactions on Knowledge Discovery from Data}%
896   \def\@journalNameShort{ACM Trans. Knowl. Discov. Data.}%
897   \def\@permissionCodeOne{1556-4681}%
898 \or % TMIS
899   \def\@journalName{ACM Transactions on Management Information Systems}%
900   \def\@journalNameShort{ACM Trans. Manag. Inform. Syst.}%
901   \def\@permissionCodeOne{2158-656X}%
902 \or % TOCE
903   \def\@journalName{ACM Transactions on Computing Education}%
904   \def\@journalNameShort{ACM Trans. Comput. Educ.}%
905   \def\@permissionCodeOne{1946-6226}%
906 \or % TOCHI
907   \def\@journalName{ACM Transactions on Computer-Human Interaction}%
908   \def\@journalNameShort{ACM Trans. Comput.-Hum. Interact.}%
909   \def\@permissionCodeOne{1073-0516}%
910 \or % TOCL
911   \def\@journalName{ACM Transactions on Computational Logic}%
912   \def\@journalNameShort{ACM Trans. Comput. Logic}%
913   \def\@permissionCodeOne{1529-3785}%
914 \or % TOCS
915   \def\@journalName{ACM Transactions on Computer Systems}%
916   \def\@journalNameShort{ACM Trans. Comput. Syst.}%
917   \def\@permissionCodeOne{0734-2071}%
918 \or % TOCT
919   \def\@journalName{ACM Transactions on Computation Theory}%
920   \def\@journalNameShort{ACM Trans. Comput. Theory}%
921   \def\@permissionCodeOne{1942-3454}%
922 \or % TODAES
923   \def\@journalName{ACM Transactions on Design Automation of Electronic Systems}%
924   \def\@journalNameShort{ACM Trans. Des. Autom. Electron. Syst.}%
925   \def\@permissionCodeOne{1084-4309}%
926 \or % TODS
927   \def\@journalName{ACM Transactions on Database Systems}%
928   \def\@journalNameShort{ACM Trans. Datab. Syst.}%
929   \def\@permissionCodeOne{0362-5915}%
930 \or % TOG
931   \def\@journalName{ACM Transactions on Graphics}%
932   \def\@journalNameShort{ACM Trans. Graph.}%
933   \def\@permissionCodeOne{0730-0301}%
934 \or % TOIS
935   \def\@journalName{ACM Transactions on Information Systems}%
936   \def\@journalName{ACM Transactions on Information Systems}%
937   \def\@permissionCodeOne{1046-8188}%
938 \or % TOIT
939   \def\@journalName{ACM Transactions on Internet Technology}%
940   \def\@journalNameShort{ACM Trans. Internet Technol.}%
941   \def\@permissionCodeOne{1533-5399}%
942 \or % TOMACS
943   \def\@journalName{ACM Transactions on Modeling and Computer Simulation}%

```

```

944 \def\@journalName{ACM Transactions on Modeling and Computer Simulation}%
945 \def\@journalNameShort{ACM Trans. Model. Comput. Simul.}%
946 \or % TOMM
947 \def\@journalName{ACM Transactions on Multimedia Computing, Communications and Applications}%
948 \def\@journalNameShort{ACM Trans. Multimedia Comput. Commun. Appl.}%
949 \def\@permissionCodeOne{1551-6857}%
950 \def\@permissionCodeTwo{0100}%
951 \or % TOMPECS
952 \def\@journalName{ACM Transactions on Modeling and Performance Evaluation of Computing Systems}%
953 \def\@journalNameShort{ACM Trans. Model. Perform. Eval. Comput. Syst.}%
954 \def\@permissionCodeOne{2376-3639}%
955 \or % TOMS
956 \def\@journalName{ACM Transactions on Mathematical Software}%
957 \def\@journalNameShort{ACM Trans. Math. Softw.}%
958 \def\@permissionCodeOne{0098-3500}%
959 \or % TOPC
960 \def\@journalName{ACM Transactions on Parallel Computing}%
961 \def\@journalNameShort{ACM Trans. Parallel Comput.}%
962 \def\@permissionCodeOne{1539-9087}%
963 \or % TOPS
964 \def\@journalName{ACM Transactions on Privacy and Security}%
965 \def\@journalNameShort{ACM Trans. Priv. Sec.}%
966 \def\@permissionCodeOne{2471-2566}%
967 \or % TOPLAS
968 \def\@journalName{ACM Transactions on Programming Languages and Systems}%
969 \def\@journalNameShort{ACM Trans. Program. Lang. Syst.}%
970 \def\@permissionCodeOne{0164-0925}%
971 \or % TOS
972 \def\@journalName{ACM Transactions on Storage}%
973 \def\@journalNameShort{ACM Trans. Storage}%
974 \def\@permissionCodeOne{1553-3077}%
975 \or % TOSEM
976 \def\@journalName{ACM Transactions on Software Engineering and Methodology}%
977 \def\@journalNameShort{ACM Trans. Softw. Eng. Methodol.}%
978 \def\@permissionCodeOne{1049-331X}%
979 \or % TOSN
980 \def\@journalName{ACM Transactions on Sensor Networks}%
981 \def\@journalNameShort{ACM Trans. Sensor Netw.}%
982 \def\@permissionCodeOne{1550-4859}%
983 \or % TRET
984 \def\@journalName{ACM Transactions on Reconfigurable Technology and Systems}%
985 \def\@journalNameShort{ACM Trans. Reconfig. Technol. Syst.}%
986 \def\@permissionCodeOne{1936-7406}%
987 \or % TSAS
988 \def\@journalName{ACM Transactions on Spatial Algorithms and Systems}%
989 \def\@journalNameShort{ACM Trans. Spatial Algorithms Syst.}%
990 \def\@permissionCodeOne{2374-0353}%
991 \or % TSC
992 \def\@journalName{ACM Transactions on Social Computing}%
993 \def\@journalNameShort{ACM Trans. Soc. Comput.}%

```

```

994 \def\@permissionCodeOne{2469-7818}%
995 \or % TSLP
996 \def\@journalName{ACM Transactions on Speech and Language Processing}%
997 \def\@journalNameShort{ACM Trans. Speech Lang. Process.}%
998 \def\@permissionCodeOne{1550-4875}%
999 \or % TWEB
1000 \def\@journalName{ACM Transactions on the Web}%
1001 \def\@journalNameShort{ACM Trans. Web}%
1002 \def\@permissionCodeOne{1559-1131}%
1003 \fi
1004 \ClassInfo{\@classname}{Using journal code \@journalCode}%
1005 }{%
1006 \ClassError{\@classname}{Incorrect journal #1}%
1007 }%

\acmJournal And the syntactic sugar around it
1008 \def\acmJournal#1{\setkeys{ACM}{acmJournal=#1}}

The defaults:
1009 \def\@journalCode@nr{0}
1010 \def\@journalName{}%
1011 \def\@journalNameShort{\@journalName}%
1012 \def\@permissionCodeOne{XXXX-XXXX}%
1013 \def\@permissionCodeTwo{}%

\acmConference This is the conference command
1014 \newcommand\acmConference[4][{}%
1015 \gdef\acmConference@shortname{#1}%
1016 \gdef\acmConference@name{#2}%
1017 \gdef\acmConference@date{#3}%
1018 \gdef\acmConference@venue{#4}%
1019 \ifx\acmConference@shortname\empty
1020 \gdef\acmConference@shortname{#2}%
1021 \fi}
1022 \acmConference[Conference'17]{ACM Conference}{July 2017}{Washington,
1023 DC, USA}

\acmBooktitle The book title of the conference:
\@acmBooktitle 1024 \def\acmBooktitle#1{\gdef\@acmBooktitle{#1}}
1025 \acmBooktitle{Proceedings of \acmConference@name
1026 \ifx\acmConference@name\acmConference@shortname\else
1027 \ (\acmConference@shortname)\fi}

\@editorsAbbrev How to abbreviate editors
1028 \def\@editorsAbbrev{Ed.}}

\@acmEditors The list of editors

```

`\editor` Add new editor to the list

```

1029 \def\editor#1{\ifx\@acmEditors\@empty
1030   \gdef\@acmEditors{#1}%
1031   \else
1032     \gdef\@editorsAbbrev{(Eds.)}%
1033     \g@addto@macro\@acmEditors{\and#1}%
1034 \fi}

```

`\subtitle` The subtitle macro

```

1035 \def\subtitle#1{\def\@subtitle{#1}}
1036 \subtitle{}

```

`\num@authorgroups` The total number of “groups”. Each group is several authors with the same affiliations(s)

```

1037 \newcount\num@authorgroups
1038 \num@authorgroups=0\relax

```

`\if@insideauthorgroup` Whether we are continuing an author group @insideauthorgroup insideauthorgroup-false

`\author` Adding an author to the list of authors and addresses

```

1039 \renewcommand\author[2][{}%
1040   \if@insideauthorgroup\else
1041     \global\advance\num@authorgroups by 1\relax
1042     \global\@insideauthorgrouptrue
1043   \fi
1044   \ifx\addresses\@empty
1045     \if@ACM@anonymous
1046       \gdef\addresses{\@author{Anonymous Author(s)}}%
1047       \gdef\authors{Anonymous Author(s)}%
1048     \else
1049       \gdef\addresses{\@author{#2}}%
1050       \gdef\authors{#2}%
1051     \fi
1052   \else
1053     \if@ACM@anonymous\else
1054       \g@addto@macro\addresses{\and\@author{#2}}%
1055       \g@addto@macro\authors{\and#2}%
1056     \fi
1057   \fi
1058   \if@ACM@anonymous
1059     \ifx\shortauthors\@empty
1060       \gdef\shortauthors{Anon.}%
1061     \fi
1062   \else
1063     \def\@tempa{#1}%
1064     \ifx\@tempa\@empty
1065       \ifx\shortauthors\@empty
1066         \gdef\shortauthors{#2}%
1067       \else

```

```

1068     \g@addto@macro\shortauthors{\and#2}%
1069     \fi
1070   \else
1071     \ifx\shortauthors\@empty
1072       \gdef\shortauthors{#1}%
1073     \else
1074       \g@addto@macro\shortauthors{\and#1}%
1075     \fi
1076   \fi
1077 \fi}

\affiliation The macro \affiliation mimics \address from amsart. Note that it has an optional
argument, which we use differently from amsart.
1078 \newcommand{\affiliation}[2][{}]{%
1079   \global\@insideauthorgroupfalse
1080   \if@ACM@anonymous\else
1081     \g@addto@macro\addresses{\affiliation{#1}{#2}}%
1082   \fi}

@ACM@affiliation@obeypunctuation Whether to use author's punctuation (by default false = add American punctuation)
1083 \define@boolkey+{@ACM@affiliation@}[@ACM@affiliation@]{obeypunctuation}%
1084 [true]{}{\ClassError{\@classname}{obeypunctuation must be true or false}}

\additionalaffiliation Additional affiliations go to footnotes
1085 \def\additionalaffiliation#1{\authornote{\@additionalaffiliation{#1}}}

\@additionalaffiliation Process additionalaffiliation inside \authornote
1086 \def\@additionalaffiliation#1{\bgroup
1087   \def\position##1{\ignorespaces}%
1088   \def\institution##1{##1\ignorespaces}%
1089   \def\department{\@ifnextchar[{\@department}{\@department[]}}%
1090   \def\@department[##1]##2{\unskip, ##2\ignorespaces}%
1091   \let\streetaddress\position
1092   \let\city\position
1093   \let\state\position
1094   \let\postcode\position
1095   \let\country\position
1096   Also with #1\unskip.\egroup}

\email The macro \email mimics \email from amsart. Agian it has an optional argument we
do not currently need, but keep for the possible future use.
1097 \renewcommand{\email}[2][{}]{%
1098   \if@ACM@anonymous\else
1099     \g@addto@macro\addresses{\email{#1}{#2}}%
1100   \fi}

\orcid Right now we do not typeset orcid

\@titlenotes The titlenotes
1101 \def\@titlenotes{}

```

```

\titlenote Adding note to the title
1102 \def\titlenote#1{%
1103   \g@addto@macro\@title{\footnotemark}%
1104   \if@ACM@anonymous
1105     \g@addto@macro\@titlenotes{%
1106       \stepcounter{footnote}\footnotetext{Title note}}%
1107   \else
1108     \g@addto@macro\@titlenotes{\stepcounter{footnote}\footnotetext{#1}}%
1109   \fi}

\@subtitlenotes The subtitlenotes
1110 \def\@subtitlenotes{}

\subtitlenote Adding note to the subtitle
1111 \def\subtitlenote#1{%
1112   \g@addto@macro\@subtitle{\footnotemark}%
1113   \if@ACM@anonymous
1114     \g@addto@macro\@subtitlenotes{%
1115       \stepcounter{footnote}\footnotetext{Subtitle note}}%
1116   \else
1117     \g@addto@macro\@subtitlenotes{%
1118       \stepcounter{footnote}\footnotetext{#1}}%
1119   \fi}

\@authornotes The authornotes
1120 \def\@authornotes{}

\authornote Adding note to the author
1121 \def\authornote#1{%
1122   \if@ACM@anonymous\else
1123     \g@addto@macro\addresses{\@authornotemark}%
1124     \g@addto@macro\@authornotes{%
1125       \stepcounter{footnote}\footnotetext{#1}}%
1126   \fi}

\authornotemark Adding footnotemark to authors
1127 \newcommand\authornotemark[1][\relax]{%
1128   \ifx#1\relax\relax\relax
1129     \g@addto@macro\addresses{\@authornotemark}%
1130   \else
1131     \g@addto@macro\addresses{\@authornotemark{#1}}%
1132   \fi}

\acmVolume The current volume
1133 \def\acmVolume#1{\def\@acmVolume{#1}}
1134 \acmVolume{1}

\acmNumber The current number
1135 \def\acmNumber#1{\def\@acmNumber{#1}}
1136 \acmNumber{1}

```

<code>\acmArticle</code>	<p>The current article</p> <pre>1137 \def\acmArticle#1{\def\@acmArticle{#1}} 1138 \acmArticle{}</pre>
<code>\acmArticleSeq</code>	<p>The sequence number</p> <pre>1139 \def\acmArticleSeq#1{\def\@acmArticleSeq{#1}} 1140 \acmArticleSeq{\@acmArticle}</pre>
<code>\acmYear</code>	<p>The current year</p> <pre>1141 \def\acmYear#1{\def\@acmYear{#1}} 1142 \acmYear{\the\year}</pre>
<code>\acmMonth</code>	<p>The current month</p> <pre>1143 \def\acmMonth#1{\def\@acmMonth{#1}} 1144 \acmMonth{\the\month}</pre>
<code>\@acmPubDate</code>	<p>The publication date</p> <pre>1145 \def\@acmPubDate{\ifcase\@acmMonth\or 1146 January\or February\or March\or April\or May\or June\or 1147 July\or August\or September\or October\or November\or 1148 December\fi~\@acmYear}</pre>
<code>\acmPrice</code>	<p>The price</p> <pre>1149 \def\acmPrice#1{\def\@acmPrice{#1}} 1150 \acmPrice{15.00}</pre>
<code>\acmSubmissionID</code>	<p>The submission id</p> <pre>1151 \def\acmSubmissionID#1{\def\@acmSubmissionID{#1}} 1152 \acmSubmissionID{}</pre>
<code>\acmISBN</code>	<p>The book isbn</p> <pre>1153 \def\acmISBN#1{\def\@acmISBN{#1}} 1154 \acmISBN{978-x-xxxx-xxxx-x/YY/MM}</pre>
<code>\acmDOI</code>	<p>The paper doi</p> <pre>1155 \def\acmDOI#1{\def\@acmDOI{#1}} 1156 \acmDOI{10.1145/nnnnnnn.nnnnnnn}</pre>
<code>\if@ACM@badge</code>	<p>Whether to print badge. Note that either left or right badge triggers it:</p> <pre>1157 \newif\if@ACM@badge 1158 \@ACM@badgefalse</pre>
<code>\@ACM@badge@width</code>	<p>The width of the badge</p> <pre>1159 \newlength\@ACM@badge@width 1160 \setlength\@ACM@badge@width{5pc}</pre>
<code>\@ACM@title@width</code>	<p>The width of the badge</p> <pre>1161 \newlength\@ACM@title@width</pre>

`\@ACM@badge@skip` The space between the badge and the title
1162 `\newlength\@ACM@badge@skip`
1163 `\setlength\@ACM@badge@skip{1pc}`

`\acmBadgeR` Setting the right badge
1164 `\newcommand\acmBadgeR[2][\@ACM@badgetrue`
1165 `\def\@acmBadgeR@url{#1}%`
1166 `\def\@acmBadgeR@image{#2}}`
1167 `\def\@acmBadgeR@url{}`
1168 `\def\@acmBadgeR@image{}`

`\acmBadgeL` Setting the left badge
1169 `\newcommand\acmBadgeL[2][\@ACM@badgetrue`
1170 `\def\@acmBadgeL@url{#1}%`
1171 `\def\@acmBadgeL@image{#2}}`
1172 `\def\@acmBadgeL@url{}`
1173 `\def\@acmBadgeL@image{}`

`\startPage` The start page of the paper
1174 `\def\startPage#1{\def\@startPage{#1}}`
1175 `\startPage{}`

`\terms` Terms are obsolete, we use CCS now.
1176 `\def\terms#1{\ClassWarning{\@classname}{The command \string\terms{} is`
1177 `obsolete. I am going to ignore it}}`

`\keywords` Keywords are mostly obsolete, we use CCS now. Still it makes sense to keep them for compatibility.
1178 `\def\keywords#1{\def\@keywords{#1}}`
1179 `\keywords{}`

`abstract` Amsart puts abstract in the box. Since we do not know whether we will use two column mode, we prefer to save the text
1180 `\renewenvironment{abstract}{\Collect@Body\@saveabstract}{}`

`\@saveabstract` And saving the abstract
1181 `\long\def\@saveabstract#1{\long\gdef\@abstract{#1}}`
1182 `\@saveabstract{}`

`\@empty` The long version of `\@empty` (to compare with `\@abstract`)
1183 `\long\def\@empty{}`

`\if@ACM@printccs` Whether to print CCS
1184 `\define@boolkey+{\ACM@topmatter@}{\ACM@}{printccs}[true]{%`
1185 `\if@ACM@printccs`
1186 `\ClassInfo{\@classname}{Printing CCS}%`
1187 `\else`
1188 `\ClassInfo{\@classname}{Suppressing CCS}%`
1189 `\fi}{\ClassError{\@classname}{printccs must be true or false}}`

`\if@ACM@printacmref` Whether to print ACM bib

```

1190 \define@boolkey+{@ACM@topmatter@}[@ACM@]{printacmref}[true]{%
1191   \if@ACM@printacmref
1192     \ClassInfo{\@classname}{Printing bibformat}%
1193   \else
1194     \ClassInfo{\@classname}{Suppressing bibformat}%
1195   \fi}{\ClassError{\@classname}{printacmref must be true or false}}

```

`\if@ACM@printfolios` Whether to print folios

```

1196 \define@boolkey+{@ACM@topmatter@}[@ACM@]{printfolios}[true]{%
1197   \if@ACM@printfolios
1198     \ClassInfo{\@classname}{Printing folios}%
1199   \else
1200     \ClassInfo{\@classname}{Suppressing folios}%
1201   \fi}{\ClassError{\@classname}{printfolios must be true or false}}

```

`\@ACM@authorssperrow` The number of authors per row. 0 means use default algorithm.

```

1202 \define@cmdkey{@ACM@topmatter@}[@ACM@]{authorssperrow}[0]{%
1203   \IfInteger{#1}{\ClassInfo{\@classname}{Setting authorssperrow to
1204     #1}}{\ClassWarning{\@classname}{Parameter authorssperrow must be
1205     numerical. Ignoring the input #1}}\gdef\@ACM@authorssperrow{0}}

```

`\settopmatter` The usual syntactic sugar

```

1206 \def\settopmatter#1{\setkeys{@ACM@topmatter@}{#1}}

```

Now the settings

```

1207 \settopmatter{printccs=true, printacmref=true}
1208 \if@ACM@manuscript
1209   \settopmatter{printfolios=true}
1210 \else
1211   \if@ACM@journal
1212     \settopmatter{printfolios=true}
1213   \else
1214     \settopmatter{printfolios=false}
1215   \fi
1216 \fi
1217 \settopmatter{authorssperrow=0}

```

`\@received` The container for the paper history

```

1218 \def\@received{}

```

`\received` The `\received` command

```

1219 \newcommand\received[2][\def\@tempa{#1}%
1220   \ifx\@tempa\empty
1221     \ifx\@received\empty
1222       \gdef\@received{Received #2}%
1223     \else
1224       \g@addto@macro{\@received}{; revised #2}%
1225     \fi

```

```

1226 \else
1227   \ifx\@received\@empty
1228     \gdef\@received{#1 #2}%
1229   \else
1230     \g@addto@macro{\@received}{; #1 #2}%
1231   \fi
1232 \fi}
1233 \AtEndDocument{%
1234   \ifx\@received\@empty\else
1235     \par\bigskip\noindent\small\normalfont\@received\par
1236   \fi}

```

3.11 Concepts system

We exclude CCSXML stuff generated by the ACM system:

```

1237 \RequirePackage{comment}
1238 \excludecomment{CCSXML}

```

\@concepts This is the storage macro for concepts

```
1239 \let\@concepts\@empty
```

\ccsdesc The first argument is the significance, the second is the concept(s)

```

1240 \newcommand\ccsdesc[2][100]{%
1241   \ccsdesc@parse#1~#2~\ccsdesc@parse@end}

```

\ccsdesc@parse The parser of the expression Significance~General~Specific (we need textcomp for \textrightarrow). Note that Specific can be empty!

```

1242 \RequirePackage{textcomp}
1243 \def\ccsdesc@parse#1~#2~#3~{%
1244   \expandafter\ifx\csname CCS@General@#2\endcsname\relax
1245     \expandafter\gdef\csname CCS@General@#2\endcsname{\textbullet\
1246       \textbf{#2}}%
1247     \expandafter\gdef\csname CCS@Punctuation@#2\endcsname{; }%
1248     \expandafter\gdef\csname CCS@Specific@#2\endcsname{}%
1249     \g@addto@macro{\@concepts}{\csname CCS@General@#2\endcsname
1250       \csname CCS@Punctuation@#2\endcsname
1251       \csname CCS@Specific@#2\endcsname}%
1252   \fi
1253   \ifx#3\relax\relax\else
1254     \expandafter\gdef\csname CCS@Punctuation@#2\endcsname{
1255       \textrightarrow\ }%
1256     \expandafter\g@addto@macro\expandafter{\csname CCS@Specific@#2\endcsname}{%
1257       \ifnum#1>499\textbf{#3}; \else
1258       \ifnum#1>299\textit{#3}; \else
1259       #3; \fi\fi}%
1260   \fi
1261 \ccsdesc@parse@finish}

```

\ccdesc@parse@finish Gobble everything to \ccsdesc@parse@end

```
1262 \def\ccsdesc@parse@finish#1\ccsdesc@parse@end{}
```

3.12 Copyright system

This is from acmcopyright.sty

`\if@printcopyright` A flag whether to print copyright symbol

```
1263 \newif\if@printcopyright
1264 \@printcopyrighttrue
```

`\if@printpermission` Whether to print permission block

```
1265 \newif\if@printpermission
1266 \@printpermissiontrue
```

`\if@acmowned` Whether ACM owns the rights to the paper

```
1267 \newif\if@acmowned
1268 \@acmownedtrue
```

Keys:

```
1269 \define@choicekey*{ACM@}{acmcopyrightmode}[%
1270   \acm@copyrightinput\acm@copyrightmode]{none,%
1271     acmcopyright,acmlicensed,rightsretained,%
1272     usgov,usgovmixed,cagov,cagovmixed,%
1273     licensedusgovmixed,%
1274     licensedcagov,licensedcagovmixed,othergov,licensedothergov}{%
1275   \@printpermissiontrue
1276   \@printcopyrighttrue
1277   \@acmownedtrue
1278   \ifnum\acm@copyrightmode=0\relax % none
1279     \@printpermissionfalse
1280     \@printcopyrightfalse
1281     \@acmownedfalse
1282   \fi
1283   \ifnum\acm@copyrightmode=2\relax % acmlicensed
1284     \@acmownedfalse
1285   \fi
1286   \ifnum\acm@copyrightmode=3\relax % rightsretained
1287     \@acmownedfalse
1288     \acmPrice{}%
1289   \fi
1290   \ifnum\acm@copyrightmode=4\relax % usgov
1291     \@printpermissiontrue
1292     \@printcopyrightfalse
1293     \@acmownedfalse
1294     \acmPrice{}%
1295   \fi
1296   \ifnum\acm@copyrightmode=6\relax % cagov
1297     \@acmownedfalse
1298   \fi
1299   \ifnum\acm@copyrightmode=8\relax % licensedusgovmixed
1300     \@acmownedfalse
1301   \fi
```

```

1302 \ifnum\acm@copyrightmode=9\relax % licensedcagov
1303 \@acmownedfalse
1304 \fi
1305 \ifnum\acm@copyrightmode=10\relax % licensedcagovmixed
1306 \@acmownedfalse
1307 \fi
1308 \ifnum\acm@copyrightmode=11\relax % othergov
1309 \@acmownedtrue
1310 \fi
1311 \ifnum\acm@copyrightmode=12\relax % licensedothergov
1312 \@acmownedfalse
1313 \fi}

```

\setcopyright This is the syntactic sugar around setting keys.

```

1314 \def\setcopyright#1{\setkeys{ACM@}{acmcopyrightmode=#1}}
1315 \setcopyright{acmcopyright}

```

\@copyrightowner Here is the owner of the copyright

```

1316 \def\@copyrightowner{%
1317 \ifcase\acm@copyrightmode\relax % none
1318 \or % acmcopyright
1319 Association for Computing Machinery.
1320 \or % acmlicensed
1321 Copyright held by the owner/author(s). Publication rights licensed to
1322 Association for Computing Machinery.
1323 \or % rightsretained
1324 Copyright held by the owner/author(s).
1325 \or % usgov
1326 \or % usgovmixed
1327 Association for Computing Machinery.
1328 \or % cagov
1329 Crown in Right of Canada.
1330 \or %cagovmixed
1331 Association for Computing Machinery.
1332 \or %licensedusgovmixed
1333 Copyright held by the owner/author(s). Publication rights licensed to
1334 Association for Computing Machinery.
1335 \or % licensedcagov
1336 Crown in Right of Canada. Publication rights licensed to
1337 Association for Computing Machinery.
1338 \or %licensedcagovmixed
1339 Copyright held by the owner/author(s). Publication rights licensed to
1340 Association for Computing Machinery.
1341 \or % othergov
1342 Association for Computing Machinery.
1343 \or % licensedothergov
1344 Copyright held by the owner/author(s). Publication rights licensed to
1345 Association for Computing Machinery.
1346 \fi}

```

```

\@formatdoi Print a clickable doi
1347 \def\@formatdoi#1{\url{https://doi.org/#1}}

\@copyrightpermission The canned permission block.
1348 \def\@copyrightpermission{%
1349   \ifcase\acm@copyrightmode\relax % none
1350   \or % acmcopyright
1351     Permission to make digital or hard copies of all or part of this
1352     work for personal or classroom use is granted without fee provided
1353     that copies are not made or distributed for profit or commercial
1354     advantage and that copies bear this notice and the full citation on
1355     the first page. Copyrights for components of this work owned by
1356     others than ACM must be honored. Abstracting with credit is
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1361   \or % acmlicensed
1362     Permission to make digital or hard copies of all or part of this
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1372   \or % rightsretained
1373     Permission to make digital or hard copies of part or all of this work
1374     for personal or classroom use is granted without fee provided that
1375     copies are not made or distributed for profit or commercial advantage
1376     and that copies bear this notice and the full citation on the first
1377     page. Copyrights for third-party components of this work must be
1378     honored. For all other uses, contact the
1379     owner\hspace*{.5pt}/author(s).
1380   \or % usgov
1381     This paper is authored by an employee(s) of the United States
1382     Government and is in the public domain. Non-exclusive copying or
1383     redistribution is allowed, provided that the article citation is
1384     given and the authors and agency are clearly identified as its
1385     source.
1386   \or % usgovmixed
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1391     government purposes only.
1392   \or % cagov
1393     This article was authored by employees of the Government of Canada.

```

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```

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1457 this article, or to allow others to do so, for Government purposes
1458 only.
1459 \fi}

\copyrightyear By default, the copyright year is the same as \acmYear, but one can override this:
1460 \def\copyrightyear#1{\def\copyrightyear{#1}}
1461 \copyrightyear{\@acmYear}

\@teaserfigures The teaser figures container
1462 \def\@teaserfigures{}

teaserfigure The teaser figure
1463 \newenvironment{teaserfigure}{\Collect@Body\@saveteaser}{}

\@saveteaser Saving the teaser
1464 \long\def\@saveteaser#1{\g@addto@macro\@teaserfigures{\@teaser{#1}}}}

\thanks We redefine amsart \thanks, so the anonymous key works
1465 \renewcommand{\thanks}[1]{%
1466   \ifnotempty{#1}{%
1467     \if@ACM@anonymous
1468       \g@addto@macro\thankses{\thanks{A note}}%
1469     \else
1470       \g@addto@macro\thankses{\thanks{#1}}%
1471     \fi}}

```

3.13 Typesetting top matter

```

\mktitle@bx Some of our formats use two column design, some use one column one. In all cases
we use wide title. Thus we typeset the top matter in a special box to be use in the
construction \@twocolumn[\<box>].
1472 \newbox\mktitle@bx

\maketitle The (in)famous \maketitle. Note that in sigchi-a mode authors are not in the title box.

```

Another note: there is a subtle difference between author notes, title notes and thankses. The latter refer to the paper itself, and therefore belong to the copyright/permission block. By the way, this was the default behavior of the old ACM classes.

```

1473 \def\maketitle{%
1474   \if@ACM@anonymous
1475     % Anonymize omission of \author-s
1476     \ifnum\num@authorgroups=0\author{}\fi
1477   \fi
1478   \begingroup
1479   \let\@footnotemark\@footnotemark@nolink
1480   \let\@footnotetext\@footnotetext@nolink
1481   \renewcommand\thefootnote{\@fnsymbol\c@footnote}%
1482   \global\@topnum\z@ % this prevents floats from falling
1483                       % at the top of page 1
1484   \global\@botnum\z@ % we do not want them to be on bottom either
1485   \hsize=\textwidth
1486   \def\@makefnmark{\hbox{\@textsuperscript{\@thefnmark}}}%
1487   \@mktitle\if@ACM@sigchiamode\else\mkauthors\fi\mkteasers
1488   \@printtopmatter
1489   \if@ACM@sigchiamode\mkauthors\fi
1490   \setcounter{footnote}{0}%
1491   \def\@makefnmark{\hbox{\@textsuperscript{\normalfont\@thefnmark}}}%
1492   \@titlenotes
1493   \@subtitlenotes
1494   \@authornotes
1495   \let\@makefnmark\relax \let\@thefnmark\relax
1496   \let\@makefntext\noindent
1497   \ifx\@empty\thankses\else
1498     \footnotetextcopyrightpermission{%
1499       \def\par{\let\par\@par}\parindent\z@\@setthanks}%
1500   \fi
1501   \footnotetextcopyrightpermission{%
1502     \if@ACM@authordraft
1503       \raisebox{-2ex}{\z@}{\z@}{\makebox[0pt][l]{\large\bfseries
1504         Unpublished
1505         working draft. Not for distribution}}}%
1506     \color[gray]{0.9}%
1507   \fi
1508   \parindent\z@\parskip0.1\baselineskip
1509   \if@ACM@authorversion\else
1510     \if@printpermission\@copyrightpermission\par\fi
1511   \fi
1512   \if@ACM@manuscript\else
1513     \if@ACM@journal\else % Print the conference information
1514       {\itshape \acmConference@shortname, \acmConference@date, \acmConference@venue}\par
1515     \fi
1516   \fi
1517   \if@printcopyright
1518     \copyright\ \@copyrightyear\ \@copyrightowner\

```

```

1519 \else
1520 \@copyrightyear.\
1521 \fi
1522 \if@ACM@manuscript
1523 Manuscript submitted to ACM\
1524 \else
1525 \if@ACM@authorversion
1526 This is the author's version of the work. It is posted here for
1527 your personal use. Not for redistribution. The definitive Version
1528 of Record was published in
1529 \if@ACM@journal
1530 \emph{\@journalName}%
1531 \else
1532 \emph{\@acmBooktitle}%
1533 \fi
1534 \ifx\@acmDOI\@empty
1535 .
1536 \else
1537 , \@formatdoi{\@acmDOI}.
1538 \fi\
1539 \else
1540 \if@ACM@journal
1541 \@permissionCodeOne/\@acmYear/\@acmMonth-ART\@acmArticle
1542 \ifx\@acmPrice\@empty\else\ $\@acmPrice\fi\
1543 \@formatdoi{\@acmDOI}%
1544 \else % Conference
1545 \ifx\@acmISBN\@empty\else ACM~ISBN~\@acmISBN
1546 \ifx\@acmPrice\@empty.\else\dots\$\@acmPrice\fi\fi
1547 \ifx\@acmDOI\@empty\else\@formatdoi{\@acmDOI}\fi%
1548 \fi
1549 \fi
1550 \fi}
1551 \endgroup
1552 \setcounter{footnote}{0}%
1553 \mkabstract
1554 \if@ACM@printccs
1555 \ifx\@concepts\@empty\else\bgroup
1556 {\@specialsection{CCS Concepts}%
1557 \@concepts\par}\egroup
1558 \fi
1559 \fi
1560 \ifx\@keywords\@empty\else\bgroup
1561 {\if@ACM@journal
1562 \@specialsection{Additional Key Words and Phrases}%
1563 \else
1564 \@specialsection{Keywords}%
1565 \fi
1566 \@keywords}\par\egroup
1567 \fi
1568 \andify\authors

```

```

1569 \andify\shortauthors
1570 \global\let\authors=\authors
1571 \global\let\shortauthors=\shortauthors
1572 \if@ACM@printacmref
1573   \mkbibcitation
1574 \fi
1575 \hypersetup{pdfauthor={\authors},
1576   pdftitle={\@title},
1577   pdfsubject={\@concepts},
1578   pdfkeywords={\@keywords}}%
1579 \@printendtopmatter
1580 \@afterindentfalse
1581 \@afterheading
1582 }

```

`\@specialsection` This macro starts section for proceedings and uses small for journals

```

1583 \def\@specialsection#1{%
1584   \ifcase\ACM@format@nr
1585     \relax % manuscript
1586     \par\medskip\small\noindent#1: %
1587   \or % acmsmall
1588     \par\medskip\small\noindent#1: %
1589   \or % acmlarge
1590     \par\medskip\small\noindent#1: %
1591   \or % acmtog
1592     \par\medskip\small\noindent#1: %
1593   \or % sigconf
1594     \section*{#1}%
1595   \or % siggraph
1596     \section*{#1}%
1597   \or % sigplan
1598     \paragraph*{#1}%
1599   \or % sigchi
1600     \section*{#1}%
1601   \or % sigchi-a
1602     \section*{#1}%
1603   \fi}

```

`\@printtopmatter` The printing of top matter starts the new page, and uses the given title box. Note that for sigchi-a we print badges here rather than in `\mkttitle` since we want them on the margins.

```

1604 \def\@printtopmatter{%
1605   \ifx\@startPage\@empty
1606     \gdef\@startPage{1}%
1607   \else
1608     \setcounter{page}{\@startPage}%
1609   \fi
1610   \thispagestyle{firstpagestyle}%
1611   \noindent

```

```

1612 \ifcase\ACM@format@nr
1613 \relax % manuscript
1614 \box\mktitle@bx\par
1615 \noindent\hrulefill\par
1616 \or % acmsmall
1617 \box\mktitle@bx\par
1618 \noindent\hrulefill\par
1619 \or % acmlarge
1620 \box\mktitle@bx\par
1621 \noindent\hrulefill\par
1622 \or % acmtog
1623 \twocolumn[\box\mktitle@bx]%
1624 \or % sigconf
1625 \twocolumn[\box\mktitle@bx]%
1626 \or % siggraph
1627 \twocolumn[\box\mktitle@bx]%
1628 \or % sigplan
1629 \twocolumn[\box\mktitle@bx]%
1630 \or % sigchi
1631 \twocolumn[\box\mktitle@bx]%
1632 \or % sigchi-a
1633 \par\box\mktitle@bx\par\bigskip
1634 \if@ACM@badge
1635 \marginpar{\noindent
1636 \ifx\@acmBadgeL@image\empty\else
1637 \href{\@acmBadgeL@url}{%
1638 \includegraphics[width=\@ACM@badge@width]{\@acmBadgeL@image}}%
1639 \hskip\@ACM@badge@skip
1640 \fi
1641 \ifx\@acmBadgeR@image\empty\else
1642 \href{\@acmBadgeR@url}{%
1643 \includegraphics[width=\@ACM@badge@width]{\@acmBadgeR@image}}%
1644 \fi}%
1645 \fi
1646 \fi
1647 }

```

\@mktitle The title of the article

```

1648 \def\@mktitle{%
1649 \ifcase\ACM@format@nr
1650 \relax % manuscript
1651 \@mktitle@i
1652 \or % acmsmall
1653 \@mktitle@i
1654 \or % acmlarge
1655 \@mktitle@i
1656 \or % acmtog
1657 \@mktitle@i
1658 \or % sigconf
1659 \@mktitle@iii

```

```

1660 \or % siggraph
1661     \@mktitle@iii
1662 \or % sigplan
1663     \@mktitle@iii
1664 \or % sigchi
1665     \@mktitle@iii
1666 \or % sigchi-a
1667     \@mktitle@iv
1668 \fi
1669 }

\@titlefont The font to typeset title
1670 \def\@titlefont{%
1671     \ifcase\ACM@format@nr
1672     \relax % manuscript
1673     \LARGE\sffamily\bfseries
1674 \or % acmsmall
1675     \LARGE\sffamily\bfseries
1676 \or % acmlarge
1677     \LARGE\sffamily\bfseries
1678 \or % acmtog
1679     \Huge\sffamily
1680 \or % sigconf
1681     \Huge\sffamily\bfseries
1682 \or % siggraph
1683     \Huge\sffamily\bfseries
1684 \or % sigplan
1685     \Huge\bfseries
1686 \or % sigchi
1687     \Huge\sffamily\bfseries
1688 \or % sigchi-a
1689     \Huge\bfseries
1690 \fi}

\@subtitlefont The font to typeset title
1691 \def\@subtitlefont{\normalsize
1692     \ifcase\ACM@format@nr
1693     \relax % manuscript
1694     \mdseries
1695 \or % acmsmall
1696     \mdseries
1697 \or % acmlarge
1698     \mdseries
1699 \or % acmtog
1700     \LARGE
1701 \or % sigconf
1702     \LARGE\mdseries
1703 \or % siggraph
1704     \LARGE\mdseries
1705 \or % sigplan

```

```

1706 \LARGE\mdseries
1707 \or % sigchi
1708 \LARGE\mdseries
1709 \or % sigchi-a
1710 \mdseries
1711 \fi}

```

`\@mkttitle@i` The version of `\mkttitle` for most journals

```

1712 \def\@mkttitle@i{\hsize=\textwidth
1713 \@ACM@title@width=\hsize
1714 \ifx\@acmBadgeL@image\@empty\else
1715 \advance\@ACM@title@width by -\@ACM@badge@width
1716 \advance\@ACM@title@width by -\@ACM@badge@skip
1717 \fi
1718 \ifx\@acmBadgeR@image\@empty\else
1719 \advance\@ACM@title@width by -\@ACM@badge@width
1720 \advance\@ACM@title@width by -\@ACM@badge@skip
1721 \fi
1722 \setbox\mkttitle@bx=\vbox{\noindent\@titlefont
1723 \ifx\@acmBadgeL@image\@empty\else
1724 \raisebox{-.5\baselineskip}[\z@][\z@]{\href{\@acmBadgeL@url}{%
1725 \includegraphics[width=\@ACM@badge@width]{\@acmBadgeL@image}}}%
1726 \hskip\@ACM@badge@skip
1727 \fi
1728 \parbox[t]{\@ACM@title@width}{\raggedright
1729 \@titlefont\noindent
1730 \@title
1731 \ifx\@subtitle\@empty\else
1732 \par\noindent{\@subtitlefont\@subtitle}
1733 \fi}%
1734 \ifx\@acmBadgeR@image\@empty\else
1735 \hskip\@ACM@badge@skip
1736 \raisebox{-.5\baselineskip}[\z@][\z@]{\href{\@acmBadgeR@url}{%
1737 \includegraphics[width=\@ACM@badge@width]{\@acmBadgeR@image}}}%
1738 \fi
1739 \par\bigskip}}%

```

`\@mkttitle@ii` The version of `\mkttitle` for TOG. Since v1.06 is subsumed by the `\mkttitle@i` macro

`\@mkttitle@iii` The version of `\@mkttitle` for sigproc. Note that since the title is centered, we leave the space for the left badge even if only the right badge is defined.

```

1740 \def\@mkttitle@iii{\hsize=\textwidth
1741 \setbox\mkttitle@bx=\vbox{\@titlefont\centering
1742 \@ACM@title@width=\hsize
1743 \if\@ACM@badge
1744 \advance\@ACM@title@width by -2\@ACM@badge@width
1745 \advance\@ACM@title@width by -2\@ACM@badge@skip
1746 \parbox[b]{\@ACM@badge@width}{\strut
1747 \ifx\@acmBadgeL@image\@empty\else
1748 \raisebox{-.5\baselineskip}[\z@][\z@]{\href{\@acmBadgeL@url}{%

```

```

1749         \includegraphics[width=\@ACM@badge@width]{\@acmBadgeL@image}}}%
1750     \fi}%
1751     \hskip\@ACM@badge@skip
1752 \fi
1753 \parbox[t]{\@ACM@title@width}{\centering\@titlefont
1754     \@title
1755     \ifx\@subtitle\@empty\else
1756         \par\noindent{\@subtitlefont\@subtitle}
1757     \fi
1758 }%
1759 \if@ACM@badge
1760     \hskip\@ACM@badge@skip
1761     \parbox[b]{\@ACM@badge@width}{\strut
1762         \ifx\@acmBadgeR@image\@empty\else
1763             \raisebox{-.5\baselineskip}{\z@}{\z@}{\href{\@acmBadgeR@url}}{%
1764                 \includegraphics[width=\@ACM@badge@width]{\@acmBadgeR@image}}}%
1765         \fi}%
1766     \fi
1767     \par\bigskip}}%

```

\@mktitle@iv The version of \@mktitle for sigchi-a

```

1768 \def\@mktitle@iv{\hsize=\textwidth
1769     \setbox\mktitle@bx=\vbox{\raggedright\leftskip5pc\@titlefont
1770         \noindent\leavevmode\leaders\hrule height 2pt\hfill\kern0pt\par
1771         \noindent\@title
1772         \ifx\@subtitle\@empty\else
1773             \par\noindent\@subtitlefont\@subtitle
1774         \fi
1775     \par\bigskip}}%

```

\@ACM@addtoaddress The macro adds an item to address using the following rules:

1. If we start a paragraph, add the item
2. Otherwise, add a comma and the item
3. However, the comma is deleted, if it is on the end of the line. We use the magic cleaders trick for this.

```

1776 \newbox\@ACM@commabox
1777 \def\@ACM@addtoaddress#1{%
1778     \ifvmode\else
1779         \if@ACM@affiliation@obeypunctuation\else
1780             \setbox\@ACM@commabox=\hbox{, }%
1781             \unskip\cleaders\copy\@ACM@commabox\hskip\wd\@ACM@commabox
1782         \fi\fi
1783     #1}

```

\institution Theoretically we can define the macros for \@affiliation inside the \@mkauthors-style commands. However, this would lead to a strange error if an author uses them outside \@affiliation. Of course we can make them produce an error message, but...

\position
\department
\streetaddress
\city
\state
\postcode
\country

```

1784 \def\streetaddress#1{\unskip\ignorespaces}
1785 \def\postcode#1{\unskip\ignorespaces}
1786 \if@ACM@journal
1787   \def\position#1{\unskip\ignorespaces}
1788   \def\institution#1{\#1\ignorespaces}
1789   \def\city#1{\unskip\ignorespaces}
1790   \def\state#1{\unskip\ignorespaces}
1791   \newcommand\department[2][0]{}
1792   \def\country#1{\if@ACM@affiliation@obeypunctuation\else, \fi#1\ignorespaces}
1793 \else
1794   \def\position#1{\if@ACM@affiliation@obeypunctuation#1\else#1\par\fi}%
1795   \def\institution#1{\if@ACM@affiliation@obeypunctuation#1\else#1\par\fi}%
1796   \newcommand\department[2][0]{\if@ACM@affiliation@obeypunctuation
1797     #2\else#2\par\fi}%
1798 % \def\streetaddress#1{\if@ACM@affiliation@obeypunctuation#1\else#1\par\fi}%
1799 \let\city\@ACM@addtoaddress
1800 \let\state\@ACM@addtoaddress
1801 % \def\postcode#1{\if@ACM@affiliation@obeypunctuation#1\else\unskip\space#1\fi}%
1802 \let\country\@ACM@addtoaddress
1803 \fi

```

\@mkauthors Typesetting authors

```

1804 \def\@mkauthors{\begingroup
1805   \hsize=\textwidth
1806   \ifcase\ACM@format@nr
1807     \relax % manuscript
1808     \@mkauthors@i
1809   \or % acmsmall
1810     \@mkauthors@i
1811   \or % acmlarge
1812     \@mkauthors@i
1813   \or % acmtog
1814     \@mkauthors@i
1815   \or % sigconf
1816     \@mkauthors@iii
1817   \or % siggraph
1818     \@mkauthors@iii
1819   \or % sigplan
1820     \@mkauthors@iii
1821   \or % sigchi
1822     \@mkauthors@iii
1823   \or % sigchi-a
1824     \@mkauthors@iv
1825   \fi
1826 \endgroup
1827 }

```

\@authorfont Somehow different conferences use different fonts for author names. Why?

```

1828 \def\@authorfont{\Large\sffamily}

```

`\@affiliationfont` Font for affiliations

```
1829 \def\@affiliationfont{\normalsize\normalfont}
```

Adjusting fonts for different formats

```
1830 \ifcase\ACM@format@nr
1831 \relax % manuscript
1832 \or % acmsmall
1833   \def\@authorfont{\large\sffamily}
1834   \def\@affiliationfont{\small\normalfont}
1835 \or % acmlarge
1836 \or % acmtog
1837   \def\@authorfont{\LARGE\sffamily}
1838   \def\@affiliationfont{\large}
1839 \or % sigconf
1840   \def\@authorfont{\LARGE}
1841   \def\@affiliationfont{\large}
1842 \or % siggraph
1843   \def\@authorfont{\normalsize\normalfont}
1844   \def\@affiliationfont{\normalsize\normalfont}
1845 \or % sigplan
1846   \def\@authorfont{\Large\normalfont}
1847   \def\@affiliationfont{\normalsize\normalfont}
1848 \or % sigchi
1849   \def\@authorfont{\bfseries}
1850   \def\@affiliationfont{\mdseries}
1851 \or % sigchi-a
1852   \def\@authorfont{\bfseries}
1853   \def\@affiliationfont{\mdseries}
1854 \fi
```

`\@typeset@author@line` At this point we have `\@currentauthors` and `\@currentaffiliations`. We typeset them in the journal style

```
1855 \def\@typeset@author@line{%
1856   \andify\@currentauthors\par\noindent
1857   \@currentauthors\def\@currentauthors{}%
1858   \ifx\@currentaffiliations\empty\else
1859     \andify\@currentaffiliations
1860     \unskip, {\@currentaffiliations}\par
1861   \fi
1862   \def\@currentaffiliations{}}
```

`\@mkauthors@i` This is version used in most journal formats. Note that `\and` between authors with the same affiliation becomes `_and_`:

```
1863 \def\@mkauthors@i{%
1864   \def\@currentauthors{}%
1865   \def\@currentaffiliations{}%
1866   \global\let\and\@typeset@author@line
1867   \def\@author##1{%
1868     \ifx\@currentauthors\empty
```

```

1869 \gdef\@currentauthors{\@authorfont\MakeTextUppercase{##1}}%
1870 \else
1871 \g@addto@macro{\@currentauthors}{\and\MakeTextUppercase{##1}}%
1872 \fi
1873 \gdef\and{}}%
1874 \def\email##1##2{%
1875 \def\affiliation##1##2{%
1876 \def\@tempa{##2}\ifx\@tempa\@empty\else
1877 \ifx\@currentaffiliations\@empty
1878 \gdef\@currentaffiliations{%
1879 \setkeys{@ACM@affiliation@}{obeypunctuation=false}%
1880 \setkeys{@ACM@affiliation@}{##1}%
1881 \@affiliationfont##2}%
1882 \else
1883 \g@addto@macro{\@currentaffiliations}{\and
1884 \setkeys{@ACM@affiliation@}{obeypunctuation=false}%
1885 \setkeys{@ACM@affiliation@}{##1}##2}%
1886 \fi
1887 \fi
1888 \global\let\and\@typeset@author@line}%
1889 \global\setbox\mktitle@bx=\vbox{\noindent\box\mktitle@bx\par\medskip
1890 \noindent\addresses\@typeset@author@line
1891 \par\medskip}%
1892 }

```

\@mkauthors@ii \@mkauthors@ii was version used in acmtog. No longer necessary

\author@bx The box to put individual author to

1893 \newbox\author@bx

\author@bx@wd The width of the author box

1894 \newdimen\author@bx@wd

\author@bx@sep The separation between the author boxes

1895 \newskip\author@bx@sep

1896 \author@bx@sep=1pc\relax

\@typeset@author@bx Typesetting the box with authors. Note that in SIGCHI-A the box is not centered.

```

1897 \def\@typeset@author@bx{\bgroup\hsize=\author@bx@wd\def\and{\par}%
1898 \global\setbox\author@bx=\vtop{\if@ACM@sigchiamode\else\centering\fi
1899 \@authorfont\@currentauthors\par\@affiliationfont
1900 \@currentaffiliation}\egroup
1901 \box\author@bx\hspace{\author@bx@sep}%
1902 \gdef\@currentauthors{}}%
1903 \gdef\@currentaffiliation{}}

```

\@mkauthors@iii The sigconf version. Here we use centered design with each author in a separate box.

1904 \def\@mkauthors@iii{%

First, we need to determine the design of the author strip. The boxes are separated by `\author@bx@sep` plus two `\author@bx@sep` margins. This means that each box must be of width $(\text{\textwidth} - \text{\author@bx@sep})/N - \text{\author@bx@sep}$, where N is the number of boxes per row.

```

1905 \author@bx@wd=\textwidth\relax
1906 \advance\author@bx@wd by -\author@bx@sep\relax
1907 \ifnum\@ACM@authorsperrow>0\relax
1908   \divide\author@bx@wd by \@ACM@authorsperrow\relax
1909 \else
1910   \ifcase\num@authorgroups
1911     \relax % 0?
1912     \or % 1=one author per row
1913     \or % 2=two authors per row
1914       \divide\author@bx@wd by \num@authorgroups\relax
1915     \or % 3=three authors per row
1916       \divide\author@bx@wd by \num@authorgroups\relax
1917     \or % 4=two authors per row (!)
1918       \divide\author@bx@wd by 2\relax
1919     \else % three authors per row
1920       \divide\author@bx@wd by 3\relax
1921   \fi
1922 \fi
1923 \advance\author@bx@wd by -\author@bx@sep\relax

```

Now, parsing of `\addresses`:

```

1924 \gdef\@currentauthors{}%
1925 \gdef\@currentaffiliation{}%
1926 \def\@author##1{\ifx\@currentauthors\@empty
1927   \gdef\@currentauthors{\par##1}%
1928 \else
1929   \g@addto@macro\@currentauthors{\par##1}%
1930 \fi
1931 \gdef\and{}}%
1932 \def\@email##1##2{\ifx\@currentaffiliation\@empty
1933   \gdef\@currentaffiliation{\nolinkurl{##2}}%
1934 \else
1935   \g@addto@macro\@currentaffiliation{\par\nolinkurl{##2}}%
1936 \fi}%
1937 \def\@affiliation##1##2{\ifx\@currentaffiliation\@empty
1938   \gdef\@currentaffiliation{%
1939     \setkeys{@ACM@affiliation@}{obexpunctuation=false}%
1940     \setkeys{@ACM@affiliation@}{##1}##2}%
1941 \else
1942   \g@addto@macro\@currentaffiliation{\par
1943     \setkeys{@ACM@affiliation@}{obexpunctuation=false}%
1944     \setkeys{@ACM@affiliation@}{##1}##2}%
1945 \fi
1946 \global\let\and\@typeset@author@bx
1947 }%

```

Actual typesetting is done by \and macro:

```

1948 \hsize=\textwidth
1949 \global\setbox\mktitle@bx=\vbox{\noindent
1950 \box\mktitle@bx\par\medskip\leavevmode
1951 \lineskip=1pc\relax\centering\hspace*{-1em}%
1952 \addresses\let\and\@typeset@author@bx\and\par\bigskip}}

```

\@mkauthors@iv The sigchia version. Now we put authors in the main text, and no more than 2 authors per line, unless overridden.

```

1953 \def\@mkauthors@iv{%

```

First, we need to determine the design of the author strip. The boxes are separated by \author@bx@sep plus two \author@bx@sep margins. This means that each box must be of width $(\text{textwidth} - \text{author@bx@sep})/N - \text{author@bx@sep}$, where N is the number of boxes per row.

```

1954 \author@bx@wd=\columnwidth\relax
1955 \advance\author@bx@wd by -\author@bx@sep\relax
1956 \ifnum\@ACM@authorsperrow>0\relax
1957 \divide\author@bx@wd by \@ACM@authorsperrow\relax
1958 \else
1959 \ifcase\@num@authorgroups
1960 \relax % 0?
1961 \or % 1=one author per row
1962 \else % 2=two authors per row
1963 \divide\author@bx@wd by 2\relax
1964 \fi
1965 \fi
1966 \advance\author@bx@wd by -\author@bx@sep\relax

```

Now, parsing of \addresses:

```

1967 \gdef\@currentauthors{}%
1968 \gdef\@currentaffiliation{}%
1969 \def\@author##1{\ifx\@currentauthors\@empty
1970 \gdef\@currentauthors{\par##1}%
1971 \else
1972 \g@addto@macro\@currentauthors{\par##1}%
1973 \fi
1974 \gdef\and{}}%
1975 \def\@email##1##2{\ifx\@currentaffiliation\@empty
1976 \gdef\@currentaffiliation{\nolinkurl{##2}}%
1977 \else
1978 \g@addto@macro\@currentaffiliation{\par\nolinkurl{##2}}%
1979 \fi}%
1980 \def\@affiliation##1##2{\ifx\@currentaffiliation\@empty
1981 \gdef\@currentaffiliation{%
1982 \setkeys{@ACM@affiliation@}{obeypunctuation=false}%
1983 \setkeys{@ACM@affiliation@}{##1}##2}%
1984 \else
1985 \g@addto@macro\@currentaffiliation{\par
1986 \setkeys{@ACM@affiliation@}{obeypunctuation=false}%

```

```

1987      \setkeys{@ACM@affiliation@}{##1}##2}%
1988      \fi
1989      \global\let\and\@typeset@author@bx}%
1990 %

Actual typesetting is done by \and macro
1991      \bgroup\hsize=\columnwidth
1992      \par\raggedright\leftskip=\z@
1993      \lineskip=1pc\noindent
1994      \addresses\let\and\@typeset@author@bx\and\par\bigskip\egroup}

\@authornotemark Adding footnote mark to authors. This version adds “normal” footnote mark.
1995 \def\@authornotemark{\g@addto@macro\@currentauthors{\footnotemark\relax}}

\@@authornotemark Adding footnote mark to authors with the given number
1996 \def\@@authornotemark#1{\g@addto@macro\@currentauthors{\footnotemark[#1]}}

\@mkteasers Typesetting teasers
1997 \def\@mkteasers{%
1998   \ifx\@teaserfigures\@empty\else
1999     \def\@teaser##1{\par\bigskip\bgroup
2000       \captionsetup{type=figure}##1\egroup\par}
2001     \global\setbox\mktitle@bx=\vbox{\noindent\box\mktitle@bx\par
2002       \noindent\@teaserfigures\par\medskip}%
2003     \fi}

\@setaddresses This is an amsart macro, which we do not need.
2004 \def\@setaddresses{}

\@mkabstract Typesetting abstract
2005 \def\@mkabstract{\bgroup
2006   \ifx\@abstract\@empty\else
2007     {\phantomsection\addcontentsline{toc}{section}{Abstract}%
2008     \if@ACM@journal
2009       \small\noindent
2010     \else
2011       \section*{Abstract}%
2012     \fi
2013     \ignorespaces\@abstract\par}%
2014   \fi\egroup}

\@mkbibcitation Print bibcitation format
2015 \def\@mkbibcitation{\bgroup
2016   \def\@pages@word{\ifnum\getrefnumber{TotPages}=1\relax page\else pages\fi}%
2017   \def\footnotemark{}%
2018   \def\{\unskip{} \ignorespaces}%
2019   \def\footnote{\ClassError{\@classname}{Please do not use footnotes
2020     inside \string\title{} or \string\author{} command! Use
2021     \string\titlenote{} or \string\authornote{} instead!}}%

```

```

2022 \def\@article@string{\ifx\@acmArticle\@empty{\ } \else,
2023   Article~\@acmArticle\ \fi}%
2024 \par\medskip\small\noindent{\bfseries ACM Reference Format:}\par\nobreak
2025 \noindent\authors. \@acmYear. \@title.
2026 \if@ACM@journal
2027   \textit{\@journalNameShort}
2028   \@acmVolume, \@acmNumber \@article@string (\@acmPubDate),
2029   \ref{TotPages}~\@pages@word.
2030 \else
2031   In \textit{\@acmBooktitle}%
2032   \ifx\@acmEditors\@empty\textit{.}\else
2033     \andify\@acmEditors\textit{, }\@acmEditors~\@editorsAbbrev.%
2034   \fi\
2035   ACM, New York, NY, USA%
2036   \@article@string\unskip, \ref{TotPages}~\@pages@word.
2037 \fi\par
2038 \noindent\@formatdoi{\@acmDOI}
2039 \par\egroup}

```

\@printendtopmatter End the top matter

```

2040 \def\@printendtopmatter{\par\medskip
2041   \ifcase\ACM@format@nr
2042     \relax % manuscript
2043     \noindent\hrulefill\par\medskip
2044   \or % acmsmall
2045     \noindent\hrulefill\par\medskip
2046   \or % acmlarge
2047     \noindent\hrulefill\par\medskip
2048   \or % acmtog
2049     \par\bigskip
2050   \or % sigconf
2051     \par\bigskip
2052   \or % siggraph
2053     \par\bigskip
2054   \or % sigplan
2055     \par\bigskip
2056   \or % sigchi
2057     \par\bigskip
2058   \or % sigchi-a
2059   \fi
2060 }

```

\@setthanks We redefine \@setthanks using \@long

```

2061 \def\@setthanks{\@long\def\thanks##1{\par##1\@addpunct.}\thankses}

```

3.14 Headers and Footers

We use fancyhdr for our headers and footers:

```

2062 \RequirePackage{fancyhdr}

```

\ACM@linecount@bx This is the box displayed in the review mode

```
2063 \if@ACM@review
2064   \newsavebox{\ACM@linecount@bx}
2065   \newlength\ACM@linecount@bxht
2066   \newcount\ACM@linecount
2067   \ACM@linecount\@ne\relax
2068   \def\ACM@mk@linecount{%
2069     \savebox{\ACM@linecount@bx}[4em][t]{\parbox[t]{4em}{%
2070       \setlength{\ACM@linecount@bxht}{-\baselineskip}%
2071       \loop{\color{red}\scriptsize\the\ACM@linecount}\
2072       \global\advance\ACM@linecount by \@ne
2073       \addtolength{\ACM@linecount@bxht}{\baselineskip}%
2074       \ifdim\ACM@linecount@bxht<\textheight\repeat}}%
2075   \fi
```

\ACM@linecountL How to display the box on the left

```
2076 \def\ACM@linecountL{%
2077   \if@ACM@review
2078     \ACM@mk@linecount
2079     \begin{picture}(0,0)%
2080       \put(-26,-22){\usebox{\ACM@linecount@bx}}%
2081     \end{picture}%
2082   \fi}
```

\ACM@linecountR How to display the box on the right

```
2083 \def\ACM@linecountR{%
2084   \if@ACM@review
2085     \ACM@mk@linecount
2086     \begin{picture}(0,0)%
2087       \put(20,-22){\usebox{\ACM@linecount@bx}}%
2088     \end{picture}%
2089   \fi}
```

\ACM@timestamp The timestamp system

```
2090 \if@ACM@timestamp
2091   % Subtracting 30 from \time gives us the effect of rounding-down despite
2092   % \numexpr rounding to nearest
2093   \newcounter{ACM@time@hours}
2094   \setcounter{ACM@time@hours}{\numexpr (\time - 30) / 60 \relax}
2095   \newcounter{ACM@time@minutes}
2096   \setcounter{ACM@time@minutes}{\numexpr \time - \theACM@time@hours * 60 \relax}
2097   \newcommand\ACM@timestamp{%
2098     \footnotesize%
2099     \the\year-\two@digits{\the\month}-\two@digits{\the\day}{ }%
2100     \two@digits{\theACM@time@hours}:\two@digits{\theACM@time@minutes}{ }%
2101     page~\thepage\ (pp. \@startPage-\pageref*{TotPages})%
2102     \ifx\@acmSubmissionID\@empty\relax\else
2103     ~Submission~ID: \@acmSubmissionID
2104   \fi
```

```

2105 }
2106 \fi

\@shortauthors Even if the author redefined \@shortauthors, we do not print them in the anonymous
mode in the headers:
2107 \def\@shortauthors{\if@ACM@anonymous Anon.\else\shortauthors\fi}

\@headfootfont The font to typeset header and footer text.
2108 \def\@headfootfont{%
2109   \ifcase\ACM@format@nr
2110     \relax % manuscript
2111     \sffamily
2112   \or % acmsmall
2113     \sffamily
2114   \or % acmlarge
2115     \sffamily
2116   \or % acmtog
2117     \sffamily
2118   \or % sigconf
2119     \sffamily
2120   \or % siggraph
2121     \sffamily
2122   \or % sigplan
2123     \sffamily
2124   \or % sigchi
2125     \sffamily
2126   \or % sigchi-a
2127     \sffamily
2128   \fi}

standardpagestyle The pagestyle for all pages but the first one
2129 \fancypagestyle{standardpagestyle}{%
2130   \fancyhf{}%
2131   \renewcommand{\headrulewidth}{\z@}%
2132   \renewcommand{\footrulewidth}{\z@}%
2133   \ifcase\ACM@format@nr
2134     \relax % manuscript
2135     \fancyhead[LE]{\ACM@linecountL\if@ACM@printfolios\thepage\fi}%
2136     \fancyhead[RO]{\if@ACM@printfolios\thepage\fi}%
2137     \fancyhead[RE]{\@shortauthors}%
2138     \fancyhead[LO]{\ACM@linecountL\shorttitle}%
2139     \fancyfoot[RO,LE]{\footnotesize Manuscript submitted to ACM}%
2140   \or % acmsmall
2141     \fancyhead[LE]{\ACM@linecountL\@headfootfont\@acmArticle\if@ACM@printfolios\thepage\fi}%
2142     \fancyhead[RO]{\@headfootfont\@acmArticle\if@ACM@printfolios\thepage\fi}%
2143     \fancyhead[RE]{\@headfootfont\@shortauthors}%
2144     \fancyhead[LO]{\ACM@linecountL\@headfootfont\shorttitle}%
2145     \fancyfoot[RO,LE]{\footnotesize \@journalName, Vol. \@acmVolume, No.
2146       \@acmNumber, Article \@acmArticle. Publication date: \@acmPubDate.}%

```

```

2147 \or % acmlarge
2148 \fancyhead[LE]{\ACM@linecountL\@headfootfont
2149 \@acmArticle\if@ACM@printfolios:\thepage\fi\quad\textbullet\quad\@shortauthors}%
2150 \fancyhead[LO]{\ACM@linecountL}%
2151 \fancyhead[RO]{\@headfootfont
2152 \shorttitle\quad\textbullet\quad\@acmArticle\if@ACM@printfolios:\thepage\fi}%
2153 \fancyfoot[RO,LE]{\footnotesize \@journalName, Vol. \@acmVolume, No.
2154 \@acmNumber, Article \@acmArticle. Publication date: \@acmPubDate.}%
2155 \or % acmtog
2156 \fancyhead[LE]{\ACM@linecountL\@headfootfont
2157 \@acmArticle\if@ACM@printfolios:\thepage\fi\quad\textbullet\quad\@shortauthors}%
2158 \fancyhead[LO]{\ACM@linecountL}%
2159 \fancyhead[RE]{\ACM@linecountR}%
2160 \fancyhead[RO]{\@headfootfont
2161 \shorttitle\quad\textbullet\quad\@acmArticle\if@ACM@printfolios:\thepage\fi\ACM@linecountR}%
2162 \fancyfoot[RO,LE]{\footnotesize \@journalName, Vol. \@acmVolume, No.
2163 \@acmNumber, Article \@acmArticle. Publication date: \@acmPubDate.}%
2164 \else % Proceedings
2165 \fancyfoot[C]{\if@ACM@printfolios\footnotesize\thepage\fi}%
2166 \fancyhead[LO]{\ACM@linecountL\@headfootfont\shorttitle}%
2167 \fancyhead[RE]{\@headfootfont\@shortauthors\ACM@linecountR}%
2168 \fancyhead[LE]{\ACM@linecountL\@headfootfont\acmConference@shortname,
2169 \acmConference@date, \acmConference@venue}%
2170 \fancyhead[RO]{\@headfootfont\acmConference@shortname,
2171 \acmConference@date, \acmConference@venue\ACM@linecountR}%
2172 \fi
2173 \if@ACM@sigchiamode
2174 \fancyheadoffset[L]{\dimexpr\marginparsep+\marginparwidth}%
2175 \fi
2176 \if@ACM@timestamp
2177 \fancyfoot[LO,RE]{\ACM@timestamp}
2178 \fi
2179 }
2180 \pagestyle{standardpagestyle}

\@folio@wd Folio blob width, height, offsets and max number
\@folio@ht
\@folio@voffset
\@folio@max
2181 \newdimen\@folio@wd
2182 \@folio@wd=\z@
2183 \newdimen\@folio@ht
2184 \@folio@ht=\z@
2185 \newdimen\@folio@voffset
2186 \@folio@voffset=\z@
2187 \def\@folio@max{1}
2188 \ifcase\ACM@format@nr
2189 \relax % manuscript
2190 \or % acmsmall
2191 \@folio@wd=45.75pt\relax
2192 \@folio@ht=1.25in\relax
2193 \@folio@voffset=.2in\relax
2194 \def\@folio@max{8}

```

```

2195 \or % acmlarge
2196   \@folio@wd=43.25pt\relax
2197   \@folio@ht=79pt\relax
2198   \@folio@voffset=.55in\relax
2199   \def\@folio@max{10}
2200 \fi

```

`\@folioblob` The macro to typeset the folio blob.

```

2201 \def\@folioblob{\@tempcnta=0\@acmArticleSeq\relax
2202   \ifnum\@tempcnta=0\relax\else
First, we calculate \@acmArticleSeq modulo \@folio@max
2203   \loop
2204     \ifnum\@tempcnta>\@folio@max\relax
2205     \advance\@tempcnta by - \@folio@max
2206   \repeat
2207   \advance\@tempcnta by -1\relax
2208   \@tempdima=\@folio@ht\relax
2209   \multiply\@tempdima by \the\@tempcnta\relax
2210   \advance\@tempdima by -\@folio@voffset\relax
2211   \begin{picture}(0,0)
2212     \makebox[\z@]{\raisebox{-\@tempdima}{%
2213       \rlap{%
2214         \raisebox{-0.45\@folio@ht}{\z@}{\z@}{%
2215           \rule{\@folio@wd}{\@folio@ht}}}%
2216       \parbox{\@folio@wd}{%
2217         \centering
2218         \textcolor{white}{\LARGE\sffamily\bfseries\@acmArticle}}}}%
2219   \end{picture}\fi}
2220

```

`firstpagestyle` The pagestyle for the first page only.

```

2221 \fancypagestyle{firstpagestyle}{%
2222   \fancyhf{}%
2223   \renewcommand{\headrulewidth}{\z@}%
2224   \renewcommand{\footrulewidth}{\z@}%
2225   \ifcase\ACM@format@nr
2226   \relax % manuscript
2227     \fancyhead[L]{\ACM@linecountL}%
2228     \fancyfoot[R0,LE]{\if@ACM@printfolios\small\thepage\fi}%
2229     \fancyfoot[RE,LO]{\footnotesize Manuscript submitted to ACM}%
2230   \or % acmsmall
2231     \fancyfoot[R0,LE]{\footnotesize \@journalName, Vol. \@acmVolume, No.
2232       \@acmNumber, Article \@acmArticle. Publication date:
2233       \@acmPubDate.}%
2234     \fancyhead[LE]{\ACM@linecountL\@folioblob}%
2235     \fancyhead[LO]{\ACM@linecountL}%
2236     \fancyhead[R0]{\@folioblob}%
2237     \fancyheadoffset[R0,LE]{0.6\@folio@wd}%
2238   \or % acmlarge

```

```

2239 \fancyfoot[R0,LE]{\footnotesize \@journalName, Vol. \@acmVolume, No.
2240 \@acmNumber, Article \@acmArticle. Publication date:
2241 \@acmPubDate.}%
2242 \fancyhead[R0]{\@folioblob}%
2243 \fancyhead[LE]{\ACM@linecountL\@folioblob}%
2244 \fancyhead[L0]{\ACM@linecountL}%
2245 \fancyheadoffset[R0,LE]{1.4\@folio@wd}%
2246 \or % acmtog
2247 \fancyfoot[R0,LE]{\footnotesize \@journalName, Vol. \@acmVolume, No.
2248 \@acmNumber, Article \@acmArticle. Publication date:
2249 \@acmPubDate.}%
2250 \fancyhead[L]{\ACM@linecountL}%
2251 \fancyhead[R]{\ACM@linecountR}%
2252 \else % Conference proceedings
2253 \fancyhead[L]{\ACM@linecountL}%
2254 \fancyhead[R]{\ACM@linecountR}%
2255 \fancyfoot[C]{\if@ACM@printfolios\footnotesize\thepage\fi}%
2256 \fi
2257 \if@ACM@timestamp
2258 \ifnum\ACM@format@nr=0\relax % Manuscript
2259 \fancyfoot[L0,RE]{\ACM@timestamp\quad
2260 \footnotesize Manuscript submitted to ACM}
2261 \else
2262 \fancyfoot[L0,RE]{\ACM@timestamp}
2263 \fi
2264 \fi
2265 }

```

\ACM@restore@pagestyle The following code by Ross Moore protects against changes by totpages package:

```

2266 \let\ACM@ps@plain\ps@plain
2267 \let\ACM@ps@myheadings\ps@myheadings
2268 \let\ACM@ps@headings\ps@headings
2269 \def\ACM@restore@pagestyle{%
2270 \let\ps@plain\ACM@ps@plain
2271 \let\ps@myheadings\ACM@ps@myheadings
2272 \let\ps@headings\ACM@ps@headings}
2273 \AtBeginDocument{\ACM@restore@pagestyle}

```

3.15 Sectioning

Sectioning is different for different levels

```

2274 \renewcommand\section{\@startsection{section}{1}{\z@}%
2275 {- .75\baselineskip \@plus -2\p@ \@minus -.2\p@}%
2276 {.25\baselineskip}%
2277 {\@secfont}}
2278 \renewcommand\subsection{\@startsection{subsection}{2}{\z@}%
2279 {- .75\baselineskip \@plus -2\p@ \@minus -.2\p@}%
2280 {.25\baselineskip}%
2281 {\@subsecfont}}

```

```

2282 \renewcommand\subsubsection{\@startsection{subsubsection}{3}{10pt}%
2283 {- .5\baselineskip \@plus -2\p@ \@minus -.2\p@}%
2284 {-3.5\p@}%
2285 {\@subsubsecfont\@adddotafter}}
2286 \renewcommand\paragraph{\@startsection{paragraph}{4}{\parindent}%
2287 {- .5\baselineskip \@plus -2\p@ \@minus -.2\p@}%
2288 {-3.5\p@}%
2289 {\@parfont\@adddotafter}}
2290 \renewcommand\part{\@startsection{part}{9}{\z@}%
2291 {-10\p@ \@plus -4\p@ \@minus -2\p@}%
2292 {4\p@}%
2293 {\@parfont}}

\section@raggedright Special version of \raggedright compatible with \MakeUppercase
2294 \def\section@raggedright{\@rightskip\@flushglue
2295 \rightskip\@rightskip
2296 \leftskip\z@skip
2297 \parindent\z@}

\@secfont Fonts for sections etc. are different for different formats.
\@subsecfont
\@subsubsecfont
\@parfont
2298 \def\@secfont{\sffamily\bfseries\section@raggedright\MakeTextUppercase}
2299 \def\@subsecfont{\sffamily\bfseries\section@raggedright}
2300 \def\@subsubsecfont{\sffamily\itshape}
2301 \def\@parfont{\itshape}
2302 \setcounter{secnumdepth}{3}
2303 \ifcase\ACM@format@nr
2304 \relax % manuscript
2305 \or % acmsmall
2306 \or % acmlarge
2307 \def\@secfont{\sffamily\large\section@raggedright\MakeTextUppercase}
2308 \def\@subsecfont{\sffamily\large\section@raggedright}
2309 \or % acmtog
2310 \def\@secfont{\sffamily\large\section@raggedright\MakeTextUppercase}
2311 \def\@subsecfont{\sffamily\large\section@raggedright}
2312 \or % sigconf
2313 \def\@secfont{\bfseries\Large\section@raggedright\MakeTextUppercase}
2314 \def\@subsecfont{\bfseries\Large\section@raggedright}
2315 \or % siggraph
2316 \def\@secfont{\sffamily\bfseries\Large\section@raggedright\MakeTextUppercase}
2317 \def\@subsecfont{\sffamily\bfseries\Large\section@raggedright}
2318 \or % sigplan
2319 \def\@secfont{\bfseries\Large\section@raggedright}
2320 \def\@subsecfont{\bfseries\section@raggedright}
2321 \renewcommand\subsubsection{\@startsection{subsubsection}{3}{\z@}%
2322 {- .75\baselineskip \@plus -2\p@ \@minus -.2\p@}%
2323 {.25\baselineskip}%
2324 {\@subsubsecfont}}
2325 \def\@subsubsecfont{\bfseries\section@raggedright}
2326 \renewcommand\paragraph{\@startsection{paragraph}{4}{\z@}%
2327 {- .5\baselineskip \@plus -2\p@ \@minus -.2\p@}%

```

```

2328 {-3.5\p@}%
2329 {\@parfont\@addspaceafter}}
2330 \def\@parfont{\bfseries\itshape}
2331 \renewcommand\subparagraph{\@startsection{subparagraph}{5}{\z@}%
2332 {-1.5\baselineskip \@plus -2\p@ \@minus -.2\p@}%
2333 {-3.5\p@}%
2334 {\@subparfont\@addspaceafter}}
2335 \def\@subparfont{\itshape}
2336 \or % sigchi
2337 \setcounter{secnumdepth}{1}
2338 \def\@secfont{\sffamily\bfseries\section@raggedright\MakeTextUppercase}
2339 \def\@subsecfont{\sffamily\bfseries\section@raggedright}
2340 \or % sigchi-a
2341 \setcounter{secnumdepth}{0}
2342 \def\@secfont{\sffamily\bfseries\section@raggedright\MakeTextUppercase}
2343 \def\@subsecfont{\sffamily\bfseries\section@raggedright}
2344 \fi

```

\@adddotafter Add punctuation after the command

```
2345 \def\@adddotafter#1{#1\@addpunct{.}}
```

\@addspaceafter Add space after the command

```
2346 \def\@addspaceafter#1{#1\@addpunct{\enspace}}
```

3.16 TOC Lists

\@dotsep Related to the \tableofcontents are all the horizontal fillers. Base \LaTeX defines \@dottedtocline, which we should not disable. Yet, this command expects \@dotsep to be defined, but leaves this to the class implementation. Since amsart does not provide this, we copy the standard variant from article here.

```
2347 \providecommand*\@dotsep{4.5}
```

3.17 Theorems

The conditional loading

```

2348 \if@ACM@acmthm
2349 \RequirePackage{acmthm}
2350 \fi

```

\@acmplainbodyfont The font to typeset the acmplain theorem style body.

```

2351 </class>
2352 <*acmthm>
2353 \def\@acmplainbodyfont{\itshape}

```

\@acmplainindent The amount to indent the acmplain theorem style.

```
2354 \def\@acmplainindent{\parindent}
```

\@acmplainheadfont The font to typeset the acmplain theorem style head.

```
2355 \def\@acmplainheadfont{\scshape}
```

`\@acmplainnotefont` The font to typeset the acmplain theorem style note.

```
2356 \def\@acmplainnotefont{\@empty}
```

Customization of acmplain theorem style:

```
2357 \ifcase\ACM@format@nr
2358 \relax % manuscript
2359 \or % acmsmall
2360 \or % acmlarge
2361 \or % acmtog
2362 \or % sigconf
2363 \or % siggraph
2364 \or % sigplan
2365 \def\@acmplainbodyfont{\itshape}
2366 \def\@acmplainindent{\z@}
2367 \def\@acmplainheadfont{\bfseries}
2368 \def\@acmplainnotefont{\normalfont}
2369 \or % sigchi
2370 \or % sigchi-a
2371 \fi
```

`acmplain` The acmplain theorem style

```
2372 \newtheoremstyle{acmplain}%
2373   {.5\baselineskip\@plus.2\baselineskip
2374     \@minus.2\baselineskip}% space above
2375   {.5\baselineskip\@plus.2\baselineskip
2376     \@minus.2\baselineskip}% space below
2377   {\@acmplainbodyfont}% body font
2378   {\@acmplainindent}% indent amount
2379   {\@acmplainheadfont}% head font
2380   {.}% punctuation after head
2381   {.5em}% spacing after head
2382   {\thmname{#1}\thmnumber{#2}\thmnote{ {\@acmplainnotefont{#3}}}}% head spec
```

`\@acmdefinitionbodyfont` The font to typeset the acmdefinition theorem style body.

```
2383 \def\@acmdefinitionbodyfont{\normalfont}
```

`\@acmdefinitionindent` The amount to indent the acmdefinition theorem style.

```
2384 \def\@acmdefinitionindent{\parindent}
```

`\@acmdefinitionheadfont` The font to typeset the acmdefinition theorem style head.

```
2385 \def\@acmdefinitionheadfont{\itshape}
```

`\@acmdefinitionnotefont` The font to typeset the acmdefinition theorem style note.

```
2386 \def\@acmdefinitionnotefont{\@empty}
```

Customization of acmdefinition theorem style:

```
2387 \ifcase\ACM@format@nr
2388 \relax % manuscript
```

```

2389 \or % acmsmall
2390 \or % acmlarge
2391 \or % acmtog
2392 \or % sigconf
2393 \or % siggraph
2394 \or % sigplan
2395 \def\@acmdefinitionbodyfont{\normalfont}
2396 \def\@acmdefinitionindent{\z@}
2397 \def\@acmdefinitionheadfont{\bfseries}
2398 \def\@acmdefinitionnotefont{\normalfont}
2399 \or % sigchi
2400 \or % sigchi-a
2401 \fi

acmdefinition The acmdefinition theorem style
2402 \newtheoremstyle{acmdefinition}%
2403   {.5\baselineskip\@plus.2\baselineskip
2404     \@minus.2\baselineskip}% space above
2405   {.5\baselineskip\@plus.2\baselineskip
2406     \@minus.2\baselineskip}% space below
2407   {\@acmdefinitionbodyfont}% body font
2408   {\@acmdefinitionindent}% indent amount
2409   {\@acmdefinitionheadfont}% head font
2410   {.}% punctuation after head
2411   {.5em}% spacing after head
2412   {\thmname{#1}\thmnumber{ #2}\thmnote{ \@acmdefinitionnotefont{#3}}}% head spec

      The definitions for theorems:
2413 \theoremstyle{acmplain}
2414 \newtheorem{theorem}[Theorem][section]
2415 \newtheorem{conjecture}[theorem]{Conjecture}
2416 \newtheorem{proposition}[theorem]{Proposition}
2417 \newtheorem{lemma}[theorem]{Lemma}
2418 \newtheorem{corollary}[theorem]{Corollary}
2419 \theoremstyle{acmdefinition}
2420 \newtheorem{example}[theorem]{Example}
2421 \newtheorem{definition}[theorem]{Definition}
2422 \theoremstyle{acmplain}

\@proofnamefont The font to typeset the proof name.
2423 \def\@proofnamefont{\scshape}

\@proofindent Whether or not to indent proofs.
2424 \def\@proofindent{\indent}

      Customization of proof environment.
2425 \ifcase\ACM@format@nr
2426 \relax % manuscript
2427 \or % acmsmall

```

```

2428 \or % acmlarge
2429 \or % acmtog
2430 \or % sigconf
2431 \or % siggraph
2432 \or % sigplan
2433 \def\@proofnamefont{\itshape}
2434 \def\@proofindent{\noindent}
2435 \or % sigchi
2436 \or % sigchi-a
2437 \fi

```

`proof` We want some customization of proof environment.

```

2438 \renewenvironment{proof}[1][\proofname]{\par
2439 \pushQED{\qed}%
2440 \normalfont \topsep6\p@\@plus6\p@\relax
2441 \trivlist
2442 \item[\@proofindent\hskip\labelsep
2443 \quad\@proofnamefont #1\@addpunct{.}]\ignorespaces
2444 }{%
2445 \popQED\endtrivlist\@endpfalse
2446 }
2447 \</acmthm>
2448 \<*class>

```

3.18 Acknowledgments

`\acks` This is a comment-like structure

```

2449 \specialcomment{acks}{%
2450 \begingroup
2451 \section*{Acknowledgments}
2452 \phantomsection\addcontentsline{toc}{section}{Acknowledgments}
2453 }{%
2454 \endgroup
2455 }

```

`\grantsponsor` We just typeset the name of the sponsor

```

2456 \def\grantsponsor#1#2#3{#2}

```

`\grantnum`

```

2457 \newcommand\grantnum[3][\#3%
2458 \def\@tempa{#1}\ifx\@tempa\empty\else\space(\url{#1})\fi}

```

3.19 Conditional typesetting

We use the comment package for conditional typesetting:

```

2459 \if@ACM@screen
2460 \includecomment{screenonly}
2461 \excludecomment{printonly}

```

```

2462 \else
2463   \excludecomment{screenonly}
2464   \includecomment{printonly}
2465 \fi
2466 \if@ACM@anonymous
2467   \excludecomment{anonsuppress}
2468   \excludecomment{acks}
2469 \else
2470   \includecomment{anonsuppress}
2471 \fi

```

3.20 Additional bibliography commands

`\showeprint` The command `\showeprint` has two arguments: the (optional) prefix and the eprint number. Right now the only prefix we understand is the (lowercase) word ‘arxiv’ (see <http://arxiv.org/hypertex/bibstyles/>).

```

2472 \newcommand\showeprint[2][arxiv]{%
2473   \def\@tempa{#1}%
2474   \ifx\@tempa\@empty\def\@tempa{arxiv}\fi
2475   \def\@tempb{arxiv}%
2476   \ifx\@tempa\@tempb
2477     arXiv:\href{http://arxiv.org/abs/#2}{#2}\else arXiv:#2%
2478   \fi}

```

3.21 End of Class

```

2479 \normalsize\normalfont\frenchspacing
2480 \end{class}

```

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Change History

v1.00		v1.05	
General: First released version	28	General: Added processing doi numbers for acmsiggraph and doi numbers for sigproc.bib	28
v1.01		Patched \setcitestyle command; closes https://github.com/borisveytsman/acmart/issues/19	28
General: Changed hyperref colors in screen mode (closes https://github.com/borisveytsman/acmart/issues/1)	28		
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Explicitly put draft option (closes https://github.com/borisveytsman/acmart/issues/4)	31	\@ACM@badge@skip: Added macro	57
Set headheight to 1pc for all formats (closes https://github.com/borisveytsman/acmart/issues/5)	28	\@ACM@badge@width: Added macro	56
v1.02		\@ACM@title@width: Added macro	56
General: Added TOPS and TSC (closes https://github.com/borisveytsman/acmart/issues/12)	28	\@mktitle@i: Added processing badges	70
Documentation changes (closes https://github.com/borisveytsman/acmart/issues/13)	28	Made generic	70
v1.03		\@mktitle@ii: Now this macro is obsolete	70
\@formatdoi: Added macro	62	\@mktitle@iii: Added processing badges	70
\if@ACM@authorversion: Added macro	30	Made more generic	70
\maketitle: Added special case of authorversion	64	\@mktitle@iv: Made more generic	71
General: Added anon suppress environment	28	\@printtopmatter: Added processing badges	67
Added authorversion option (closes https://github.com/borisveytsman/acmart/issues/9)	28	\@subtitlefont: Added macro	69
v1.04		\@titlefont: Added macro	69
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\acmDOI: Name change by Matthew Fluet	56	\acmBadgeR: Added macro	57
\acmISBN: Name change by Matthew Fluet	56	\if@ACM@badge: Added macro	56
General: Updated bibliography for siggraph	28	v1.07	
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		Corrected a bug with permission and footnotes order	64
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		General: SIGPLAN reformatting by Matthew Fluet	28
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		v1.09	
		General: Revert SIGPLAN caption rules	28
		v1.10	
		\maketitle: Corrected a bug with doi in manuscript and author version, https://github.com/borisveytsman/acmart/issues/36	64

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