

# L<sup>A</sup>T<sub>E</sub>X 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 profession<sup>1</sup>. It was one of the early adopters of  $\text{\TeX}$  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  $\text{\LaTeX}$  package.

The package uses only free  $\text{\TeX}$  packages and fonts included in  $\text{\TeX}$ Live, Mik $\text{\TeX}$  and other popular  $\text{\TeX}$  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 Matthew Fluet, John Owens, Craig Rodkin, Bernard Rous, David Shamma, Stephen Spencer 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  $\text{\TeX}$  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.

If you decide to install the package yourself, follow the standard rules:

1. Run `latex on acmart.ins`. This will produce the file `acmart.cls`.
2. Put the file `acmart.cls` and the bibliography files `*.bst` to the places where  $\text{\LaTeX}$  can find them (see [?] or the documentation for your  $\text{\TeX}$  system).
3. Update the database of file names. Again, see [?] or the documentation for your  $\text{\TeX}$  system for the system-specific details.
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  $\text{\TeX}$  distributions ( $\text{\TeX}$ Live, Mac $\text{\TeX}$ , Mik $\text{\TeX}$ ) of 2015 and later, so you probably have them installed. Just in case here is the list of these packages:

- `amscls`, <http://www.ctan.org/pkg/amscls>

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<sup>1</sup><http://www.acm.org/>

- *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>
- *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>
- *latex-tools*, <http://www.ctan.org/pkg/latex-tools>
- *libertine*, <http://www.ctan.org/pkg/libertine>
- *manyfoot*, <http://www.ctan.org/pkg/manyfoot>
- *microtype*, <http://www.ctan.org/pkg/microtype>
- *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>
- *setspace*, <http://www.ctan.org/pkg/setspace>
- *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>

## 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}
```

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.

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 Bib<sub>T</sub><sub>E</sub>X style is based on `natbib`. In most cases you do not need to set it. See Section 2.10.

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

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, 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.
acmlarge	Large single column format, used for IMWUT, JOCCH, PACMPL, TAP
acmtog	Large double column format, used for TOG
sigconf	Proceedings format for most of ACM conferences (with the exceptions listed below) and all ICPS volumes
siggraph	Proceedings format for SIGGRAPH and SIGGRAPH Asia conferences, published in ACM Transactions on Graphics journal issues
sigplan	Proceedings format for SIGPLAN conferences
sigchi	Proceedings format for SIGCHI conferences
sigchi-a	Format for SIGCHI extended abstract

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)

## 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` [?].

`\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 *or* the name of the book as set by the editor.

**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}
```

Normally this command is entered either by the editor or by the typesetter.

`\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.

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
JOCCH	ACM Journal on Computing and Cultural Heritage
PACMPL	PACM on Programming Languages
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



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

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

`\orcid`

`\affiliation`

`\email`

```

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

```

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  $I_3$ , ...). 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.

<pre>\position \institution \department \streetaddress \city \state \postcode \country</pre>	<p>The <code>\affiliation</code> command is further structured to interact with the metadata extraction tools. Inside the this command you should use <code>\position</code>, <code>\institution</code>, <code>\department</code>, <code>\city</code>, <code>\streetaddress</code>, <code>\state</code>, <code>\postcode</code> and <code>\country</code> 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 <i>are</i> necessary since they are used by the XML metadata extraction programs. Do <i>not</i> put commas or <code>\\</code> between the elements of <code>\affiliation</code>: they will be provided automatically.</p> <p>An example of the author block:</p>
--	---

```
\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{Sydney}
  \state{NSW}
  \postcode{2052}
  \country{Australia}}
\email{author@nsw.au.edu}
\author{A. N. Other}
\affiliation{%
  \institution{University of New South Wales}
  \city{Sydney}
  \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{Sydney}
  \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}}
```

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.

`\titlenote` While the command `\thanks` generates a note without footnote mark, sometimes  
`\subtitlenote` the authors might need notes more tightly connected to the title, subtitle or author. The  
`\authornote` commands `\titlenote`, `\subtitlenote` and `\authornote` that follow the correspond-  
ing commands (`\title`, `\subtitle` and `\author`) generate such notes, for example

```
\title{This is a title}
\titlenote{This is a titlenote}
\author{A. U. Thor}
\authornote{This is an authornote}
```

\acmVolume \acmNumber \acmArticle \acmYear \acmMonth	<p>The macros \acmVolume, \acmNumber, \acmArticle, \acmYear and \acmMonth are inserted by the editor and set the journal volume, issue, article number, year and month correspondingly. The arguments of all these commands, including \acmMonth is numerical, including \acmMonth, for example,</p> <pre> \acmVolume{9} \acmNumber{4} \acmArticle{39} \acmYear{2010} \acmMonth{3} </pre>
\acmArticleSeq	<p>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 \acmArticleSeq{&lt;n&gt;} can be used to change it:</p> <pre> \acmArticle{39} % The sequence number will be 39 by default \acmArticleSeq{5} % We redefine it to 5 </pre>
\acmPrice	<p>The macro \acmPrice{&lt;price&gt;} sets the price for the article (by default 15.00), for example,</p> <pre> \acmPrice{25.00} </pre>
\acmISBN	<p>Book-like volumes have ISBN numbers attached to them. The macro \acmISBN{&lt;ISBN&gt;} sets it. Normally it is set by the typesetter, for example,</p> <pre> \acmISBN{978-1-4503-3916-2} </pre>
\acmDOI	<p>The macro \acmDOI{&lt;DOI&gt;} sets the DOI number of the article, for example,</p> <pre> \acmDOI{10.1145/9999997.9999999} </pre>
\acmBadgerR \acmBadgerL	<p>It is normally set by the typesetter.</p> <p>Some conference articles get special distinction, for example, the artifact evaluation for PPOPP 2016 (see <a href="http://ctuning.org/ae/ppopp2016.html">http://ctuning.org/ae/ppopp2016.html</a>). These articles display special badges supplied by the conference organizers. The class provides commands to add these badges: \acmBadgerR[&lt;url&gt;]{&lt;graphics&gt;} and \acmBadgerL[&lt;url&gt;]{&lt;graphics&gt;}. The first command puts the badge to the right of the title, and the second one—to the left. The exception is the sigchi—a mode for SIGCHI Extended abstract, which puts the badges on the left margin. The argument have the following meaning: [&lt;url&gt;], if provided, sets the link to the badge authority in the screen version, while {&lt;graphics&gt;} 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 ae-logo.pdf, the command is</p> <pre> \acmBadgerR[http://ctuning.org/ae/ppopp2016.html]{ae-logo} </pre>

`\startPage` The macro `\startPage{<page>}` sets the first page of the article in the journal or book. It is used by the typesetter.

`\terms` The macros `\terms{<term, term,...>}` and `\keywords{<keyword, keyword,...>}` set the main terms and the additional keywords for the article. Term and keywords must be separated by commas, for example,

```
\terms{wireless, interference}
\keywords{wireless sensor networks, media access control,
multi-channel, radio interference, time synchronization}
```

`CCSXML` ACM publications are classified according to the ACM Computing Classification Scheme (CCS). CCS codes are used both in the typeset version of the publications *and* 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 `\maketitle`.

Table 4: Parameters for `\setcopyright` command

Parameter	Meaning
<code>none</code>	The copyright and permission information is not typeset (this is the option for some ACM conferences).
<code>acmcopyright</code>	The authors transfer the copyright to ACM (the “traditional” choice).
<code>acmlicensed</code>	The authors retain the copyright but license the publication rights to ACM.
<code>rightsretained</code>	The authors retain the copyright and publication rights to themselves or somebody else.
<code>usgov</code>	All the authors are employees of the US Government.
<code>usgovmixed</code>	Some authors are employees of the US Government.
<code>cagov</code>	All the authors are employees of the Canadian Government.
<code>cagovmixed</code>	Some authors are employees of the Canadian Government.

`\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 `\setcopyright{...}` is introduced. Its argument is the copyright status of the paper, for example, `\setcopyright{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.

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

```
\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,

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)

```
\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}
```

`\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}
\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 now several good packages for typesetting algorithms [?, ?, ?], 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` [?] 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 [?]. 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
sourcernote. This is a table sourcernote. This is a table
sourcernote.

\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, corollary, and

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

## 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  $\{\langle sponsorID \rangle\}$  is the unique ID used to match grants to sponsors,  $\{\langle name \rangle\}$  is the name of the sponsor,  $\{\langle url \rangle\}$  is its URL, and  $\{\langle number \rangle\}$  is the grant number. The  $\{\langle sponsorID \rangle\}$  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  $\{\langle sponsorID \rangle\}$  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}{http://dx.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<sub>TeX</sub> 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<sub>TeX</sub> 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 BibTeX 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 =       "99.9999/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 = CACM,
  volume = "39",
  number = "11",
  month =  nov,
  year =   "1996",
}

```

## 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 [?]: ACMBLue, ACMYellow, ACMOrange, ACMRed, ACMLightBlue, ACMGreen, ACMPurple, ACMDarkBlue. You can use them in the color assignments.

## 2.12 Other notable packages and typographic remarks

Several other packages are recommended for specialized tasks.

The package *subcaption* [?] is recommended for complex figures with several subplots or subfigures that require separate subcaptioning. The packages *nomencl* [?] and *glossaries* [?] 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.

## 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 [2017/02/15 v1.30 Typesetting articles for Association of
7 Computing Machinery]
```

And the driver code:

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

### 3.2 Options

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

```
26 \RequirePackage{xkeyval}
```

format The possible formats

```
27 \define@choicekey*+{acmart.cls}{format}[\ACM@format\ACM@format@nr]{%
28   manuscript, acmsmall, acmlarge, acmtog, sigconf, siggraph,
29   sigplan, sigchi, sigchi-a}[manuscript]{}{%
30   \ClassError{\@classname}{The option format must be manuscript,
31     acmsmall, acmlarge, acmtog, sigconf, siggraph,
32     sigplan, sigchi or sigchi-a}}
33 \def\@DeclareACMFormat#1{\DeclareOptionX{#1}{\setkeys{acmart.cls}{format=#1}}}
34 \@DeclareACMFormat{manuscript}
```

```

35 \DeclareACMFormat{acmsmall}
36 \DeclareACMFormat{acmlarge}
37 \DeclareACMFormat{acmtog}
38 \DeclareACMFormat{sigconf}
39 \DeclareACMFormat{siggraph}
40 \DeclareACMFormat{sigplan}
41 \DeclareACMFormat{sigchi}
42 \DeclareACMFormat{sigchi-a}
43 \ExecuteOptionsX{format}

\if@ACM@screen Whether we use screen mode
44 \define@boolkey+{acmart.cls}[@ACM@]{screen}[true]{%
45   \if@ACM@screen
46     \PackageInfo{\@classname}{Using screen mode}%
47   \else
48     \PackageInfo{\@classname}{Not using screen mode}%
49   \fi}{\PackageError{\@classname}{Option screen can be either true or
50     false}}
51 \ExecuteOptionsX{screen=false}

\if@ACM@review Whether we use review mode
52 \define@boolkey+{acmart.cls}[@ACM@]{review}[true]{%
53   \if@ACM@review
54     \PackageInfo{\@classname}{Using review mode}%
55   \else
56     \PackageInfo{\@classname}{Not using review mode}%
57   \fi}{\PackageError{\@classname}{Option review can be either true or
58     false}}
59 \ExecuteOptionsX{review=false}

\if@ACM@authorversion Whether we use author's version
60 \define@boolkey+{acmart.cls}[@ACM@]{authorversion}[true]{%
61   \if@ACM@authorversion
62     \PackageInfo{\@classname}{Using authorversion mode}%
63   \else
64     \PackageInfo{\@classname}{Not using authorversion mode}%
65   \fi}{\PackageError{\@classname}{Option authorversion can be either true or
66     false}}
67 \ExecuteOptionsX{authorversion=false}

\if@ACM@natbib@override Whether to override the format decision about natbib
68 \newif\if@ACM@natbib@override
69 \@ACM@natbib@overridefalse

\if@ACM@natbib Whether we use natbib mode
70 \define@boolkey+{acmart.cls}[@ACM@]{natbib}[true]{%
71   \@ACM@natbib@override=true
72   \if@ACM@natbib
73     \PackageInfo{\@classname}{Explicitly selecting natbib mode}%

```



```

74 \else
75 \PackageInfo{\@classname}{Explicitly deselecting natbib mode}%
76 \fi}{\PackageError{\@classname}{Option natbib can be either true or
77 false}}

\if@ACM@anonymous Whether we use anonymous mode
78 \define@boolkey+{acmart.cls}{@ACM@}{anonymous}[true]{%
79 \if@ACM@anonymous
80 \PackageInfo{\@classname}{Using anonymous mode}%
81 \else
82 \PackageInfo{\@classname}{Not using anonymous mode}%
83 \fi}{\PackageError{\@classname}{Option anonymous can be either true or
84 false}}
85 \ExecuteOptionsX{anonymous=false}

\ACM@fontsize The font size to pass to the base class
86 \def\ACM@fontsize{}
87 \DeclareOptionX{9pt}{\edef\ACM@fontsize{\CurrentOption}}
88 \DeclareOptionX{10pt}{\edef\ACM@fontsize{\CurrentOption}}
89 \DeclareOptionX{11pt}{\edef\ACM@fontsize{\CurrentOption}}
90 \DeclareOptionX{12pt}{\edef\ACM@fontsize{\CurrentOption}}

91 \DeclareOptionX{draft}{\PassOptionsToClass{\CurrentOption}{amsart}}
92 \DeclareOptionX{*}{\PassOptionsToClass{\CurrentOption}{amsart}}
93 \ProcessOptionsX
94 \ClassInfo{\@classname}{Using format \ACM@format, number \ACM@format@nr}

```

### 3.3 Setting switches

```

\if@ACM@manuscript Whether we use manuscript mode
95 \newif\if@ACM@manuscript

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

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

Setting up switches
98 \ifnum\ACM@format@nr=0\relax
99 \@ACM@manuscripttrue
100 \else
101 \@ACM@manuscriptfalse
102 \fi
103 \@ACM@sigchiamodefalse
104 \ifcase\ACM@format@nr
105 \relax % manuscript
106 \@ACM@journaltrue

```

```

107 \or % acmsmall
108   \@ACM@journaltrue
109 \or % acmlarge
110   \@ACM@journaltrue
111 \or % acmtog
112   \@ACM@journaltrue
113 \or % sigconf
114   \@ACM@journalfalse
115 \or % siggraph
116   \@ACM@journalfalse
117 \or % sigplan
118   \@ACM@journalfalse
119 \or % sigchi
120   \@ACM@journalfalse
121 \or % sigchi-a
122   \@ACM@journalfalse
123   \@ACM@sigchiamodetrue
124 \fi

```

A format sets up `\if@ACM@natbib` only if `\@ACM@natbib@override` is false (i.e. user did *not* override format's selection):

```

125 \if@ACM@natbib@override\else
126   \@ACM@natbibtrue
127 \fi

```

### 3.4 Loading base class and package

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

```

128 \ifx\ACM@fontsize\@empty
129   \ifcase\ACM@format@nr
130     \relax % manuscript
131     \def\ACM@fontsize{9pt}%
132   \or % acmsmall
133     \def\ACM@fontsize{10pt}%
134   \or % acmlarge
135     \def\ACM@fontsize{10pt}%
136   \or % acmtog
137     \def\ACM@fontsize{9pt}%
138   \or % sigconf
139     \def\ACM@fontsize{9pt}%
140   \or % siggraph
141     \def\ACM@fontsize{9pt}%
142   \or % sigplan
143     \def\ACM@fontsize{9pt}%
144   \or % sigchi
145     \def\ACM@fontsize{10pt}%
146   \or % sigchi-a
147     \def\ACM@fontsize{10pt}%
148   \fi
149 \fi

```

```

150 \ClassInfo{\@classname}{Using fontsize \ACM@fontsize}
151 \LoadClass[\ACM@fontsize, reqno]{amsart}
152 \RequirePackage{microtype}

```

We need totpages package to calculate the number of pages

```

153 \RequirePackage{totpages}

```

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

```

154 \RequirePackage{environ}

```

We use setspace for doublespacing

```

155 \if@ACM@manuscript
156 \RequirePackage{setspace}
157 \onehalfspacing
158 \fi

```

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

```

159 \if@ACM@natbib
160 \RequirePackage{natbib}
161 \renewcommand{\bibsection}{%
162   \section*{\refname}%
163   \phantomsection\addcontentsline{toc}{section}{\refname}%
164 }
165 \renewcommand{\bibfont}{\bibliofont}
166 \renewcommand\setcitestyle[1]{
167   \@for\@tempa:=#1\do
168   {\def\@tempb{round}\ifx\@tempa\@tempb
169     \renewcommand\NAT@open{(\}\renewcommand\NAT@close{)\}\fi
170     \def\@tempb{square}\ifx\@tempa\@tempb
171       \renewcommand\NAT@open{[\}\renewcommand\NAT@close{]}\fi
172     \def\@tempb{angle}\ifx\@tempa\@tempb
173       \renewcommand\NAT@open{$<$}\renewcommand\NAT@close{$>$}\fi
174     \def\@tempb{curly}\ifx\@tempa\@tempb
175       \renewcommand\NAT@open{\{\}\renewcommand\NAT@close{\}\}\fi
176     \def\@tempb{semicolon}\ifx\@tempa\@tempb
177       \renewcommand\NAT@sep{;}\fi
178     \def\@tempb{colon}\ifx\@tempa\@tempb
179       \renewcommand\NAT@sep{:}\fi
180     \def\@tempb{comma}\ifx\@tempa\@tempb
181       \renewcommand\NAT@sep{,}\fi
182     \def\@tempb{authoryear}\ifx\@tempa\@tempb
183       \NAT@numbersfalse\fi
184     \def\@tempb{numbers}\ifx\@tempa\@tempb
185       \NAT@numberstrue\NAT@superfalse\fi
186     \def\@tempb{super}\ifx\@tempa\@tempb
187       \NAT@numberstrue\NAT@supertrue\fi
188     \def\@tempb{nobibstyle}\ifx\@tempa\@tempb
189       \let\bibstyle=\gobble\fi

```

```

190 \def\@tempb{bibstyle}\ifx\@tempa\@tempb
191 \let\bibstyle=\@citestyle\fi
192 \def\@tempb{sort}\ifx\@tempa\@tempb
193 \def\NAT@sort{\@ne}\fi
194 \def\@tempb{nosort}\ifx\@tempa\@tempb
195 \def\NAT@sort{\@z}\fi
196 \def\@tempb{compress}\ifx\@tempa\@tempb
197 \def\NAT@cmprs{\@ne}\fi
198 \def\@tempb{nocompress}\ifx\@tempa\@tempb
199 \def\NAT@cmprs{\@z}\fi
200 \def\@tempb{sort&compress}\ifx\@tempa\@tempb
201 \def\NAT@sort{\@ne}\def\NAT@cmprs{\@ne}\fi
202 \def\@tempb{mcite}\ifx\@tempa\@tempb
203 \let\NAT@merge\@ne\fi
204 \def\@tempb{merge}\ifx\@tempa\@tempb
205 \ifnum\NAT@merge<\tw@\let\NAT@merge\tw@\fi
206 \def\@tempb{elide}\ifx\@tempa\@tempb
207 \ifnum\NAT@merge<\thr@\let\NAT@merge\thr@\fi
208 \def\@tempb{longnamesfirst}\ifx\@tempa\@tempb
209 \NAT@longnamestrue\fi
210 \def\@tempb{nonamebreak}\ifx\@tempa\@tempb
211 \def\NAT@nmfmt#1{\mbox{\NAT@up#1}}\fi
212 \expandafter\NAT@find@eq\@tempa=\relax\@nil
213 \if\@tempc\relax\else
214 \expandafter\NAT@rem@eq\@tempc
215 \def\@tempb{open}\ifx\@tempa\@tempb
216 \xdef\NAT@open{\@tempc}\fi
217 \def\@tempb{close}\ifx\@tempa\@tempb
218 \xdef\NAT@close{\@tempc}\fi
219 \def\@tempb{aysep}\ifx\@tempa\@tempb
220 \xdef\NAT@aysep{\@tempc}\fi
221 \def\@tempb{yysep}\ifx\@tempa\@tempb
222 \xdef\NAT@yrsep{\@tempc}\fi
223 \def\@tempb{notesep}\ifx\@tempa\@tempb
224 \xdef\NAT@cmt{\@tempc}\fi
225 \def\@tempb{citesep}\ifx\@tempa\@tempb
226 \xdef\NAT@sep{\@tempc}\fi
227 \fi
228 }%
229 \NAT@@setcites
230 }
231 \renewcommand\citestyle[1]{%
232 \ifcsname bibstyle@#1\endcsname%
233 \csname bibstyle@#1\endcsname\let\bibstyle\@gobble%
234 \else%
235 \latexerror{Undefined ‘#1’ citestyle}%
236 \fi
237 }%
238 \fi

```

`\bibstyle@acmauthoryear` The default author-year format:

```
239 \newcommand{\bibstyle@acmauthoryear}{%
240   \setcitestyle{%
241     authoryear,%
242     open={()},close={}},citesep={;},%
243     aysep={},yysep={},,%
244     notesep={, }}}
```

`\bibstyle@acmnumeric` The default numeric format:

```
245 \newcommand{\bibstyle@acmnumeric}{%
246   \setcitestyle{%
247     numbers,sort&compress,%
248     open={[]},close={[]},citesep={,},%
249     notesep={, }}}
```

The default is numeric:

```
250 \if@ACM@natbib
251 \citestyle{acmnumeric}
252 \fi
```

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:

```
253 \def\@startsection#1#2#3#4#5#6{%
254   \if@noskipsec \leavevmode \fi
255   \par
256   \@tempskipa #4\relax
257   \@afterindenttrue
258   \ifdim \@tempskipa <\z@
259     \@tempskipa -\@tempskipa \@afterindentfalse
260   \fi
261   \if@nobreak
262     \everypar{}%
263   \else
264     \addpenalty\@secpenalty\addvspace\@tempskipa
265   \fi
266   \@ifstar
267     {\@ssect{#3}{#4}{#5}{#6}}%
268     {\@dblarg{\@sect{#1}{#2}{#3}{#4}{#5}{#6}}}
269 \def\@sect#1#2#3#4#5#6[#7]#8{%
270   \ifnum #2>\c@secnumdepth
271     \let\@svsec\@empty
272   \else
273     \refstepcounter{#1}%
274     \protected@edef\@svsec{\@secntformat{#1}\relax}%
275   \fi
276   \@tempskipa #5\relax
277   \ifdim \@tempskipa>\z@
278     \begingroup
279     #6{%
```

```

280     \@hangfrom{\hskip #3\relax\@svsec}%
281     \interlinepenalty \@M #8\@par}%
282 \endgroup
283 \csname #1mark\endcsname{#7}%
284 \addcontentsline{toc}{#1}{%
285     \ifnum #2>\c@secnumdepth \else
286     \protect\numberline{\csname the#1\endcsname}%
287     \fi
288     #7}%
289 \else
290     \def\@svsechd{%
291         #6{\hskip #3\relax
292             \@svsec #8}%
293         \csname #1mark\endcsname{#7}%
294         \addcontentsline{toc}{#1}{%
295             \ifnum #2>\c@secnumdepth \else
296             \protect\numberline{\csname the#1\endcsname}%
297             \fi
298             #7}}%
299 \fi
300 \@xsect{#5}}
301 \def\@xsect#1{%
302     \@tempskipa #1\relax
303     \ifdim \@tempskipa>\z@
304         \par \nobreak
305         \vskip \@tempskipa
306         \@afterheading
307     \else
308         \@nobreakfalse
309         \global\@noskipsectrue
310         \everypar{%
311             \if@noskipsec
312                 \global\@noskipsecfalse
313                 {\setbox\z@\lastbox}%
314                 \clubpenalty\@M
315                 \begingroup \@svsechd \endgroup
316                 \unskip
317                 \@tempskipa #1\relax
318                 \hskip -\@tempskipa
319             \else
320                 \clubpenalty \@clubpenalty
321                 \everypar{}%
322             \fi}%
323     \fi
324     \ignorespaces}
325 \def\@secCNTformat#1{\csname the#1\endcsname\quad}
326 \def\@essect#1#2#3#4#5{%
327     \@tempskipa #3\relax
328     \ifdim \@tempskipa>\z@
329         \begingroup

```

```

330      #4{%
331        \@hangfrom{\hskip #1}%
332        \interlinepenalty \@M #5\@par}%
333    \endgroup
334  \else
335    \def\@svsechd{#4{\hskip #1\relax #5}}%
336  \fi
337  \@xsect{#3}}

  And hyperref
338 \let\@footnotemark@nolink\@footnotemark
339 \let\@footnotetext@nolink\@footnotetext
340 \RequirePackage[bookmarksnumbered,unicode]{hyperref}
341 \pdfstringdefDisableCommands{%
342   \def\unskip{ }%
343   \def\textbullet{- }%
344   \def\textrightarrow{-> }%
345   \def\footnotemark{ }%
346 }
347 \urlstyle{rm}
348 \ifcase\ACM@format@nr
349 \relax % manuscript
350 \or % acmsmall
351 \or % acmlarge
352 \or % acmtog
353 \or % sigconf
354 \or % siggraph
355 \or % sigplan
356   \urlstyle{sf}
357 \or % sigchi
358 \or % sigchi-a
359   \urlstyle{sf}
360 \fi
361 \if@ACM@screen
362   \hypersetup{colorlinks,
363     linkcolor=ACMRed,
364     citecolor=ACMPurple,
365     urlcolor=ACMDarkBlue,
366     filecolor=ACMDarkBlue}
367 \else
368   \hypersetup{hidelinks}
369 \fi

  Bibliography mangling.
370 \if@ACM@natbib
371   \let\citeN\cite
372   \let\cite\citep
373   \let\citeANP\citeauthor
374   \let\citeNN\citeyearpar
375   \let\citeyearNP\citeyear
376   \let\citeyear\citeyearpar

```

```

377 \let\citeNP\citealt
378 \DeclareRobustCommand\citeA
379   {\begingroup\NAT@swafalse
380    \let\NAT@ctype\@ne\NAT@partrue\NAT@fullfalse\NAT@open\NAT@citetp}%
381 \providecommand\newblock{}%
382 \else
383 \providecommand\citename[1]{#1}
384 \fi
385 \def\shortcite#1{\ifNAT@numbers\cite{#1}\else\citeyear{#1}\fi}

```

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

```

386 \def\bibliographystyle#1{%
387   \ifx\@begindocumenthook\@undefined\else
388     \expandafter\AtBeginDocument
389   \fi
390   {\if@filesw
391     \immediate\write\@auxout{\string\bibstyle{#1}}%
392   \fi}}

```

### Graphics and color

```

393 \RequirePackage{graphicx, xcolor}

```

We define ACM colors according to [?]:

```

394 \definecolor[named]{ACMBlue}{cmyk}{1,0.1,0,0.1}
395 \definecolor[named]{ACMYellow}{cmyk}{0,0.16,1,0}
396 \definecolor[named]{ACMOrange}{cmyk}{0,0.42,1,0.01}
397 \definecolor[named]{ACMRed}{cmyk}{0,0.90,0.86,0}
398 \definecolor[named]{ACMLightBlue}{cmyk}{0.49,0.01,0,0}
399 \definecolor[named]{ACMGreen}{cmyk}{0.20,0,1,0.19}
400 \definecolor[named]{ACMPurple}{cmyk}{0.55,1,0,0.15}
401 \definecolor[named]{ACMDarkBlue}{cmyk}{1,0.58,0,0.21}

```

## 3.5 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>.

```

402 \RequirePackage{geometry}
403 \ifcase\ACM@format@nr
404 \relax % manuscript
405 \geometry{letterpaper,head=13pt}%
406 \or % acmsmall
407 \geometry{twoside=true,
408   includeheadfoot, head=13pt, foot=2pc,
409   paperwidth=6.75in, paperheight=10in,
410   top=58pt, bottom=44pt, inner=46pt, outer=46pt
411 }%
412 \or % acmlarge

```



```

413 \geometry{twoside=true, head=13pt, foot=2pc,
414     paperwidth=8.5in, paperheight=11in,
415     includeheadfoot,
416     top=78pt, bottom=114pt, inner=81pt, outer=81pt
417 }%
418 \or % acmtog
419 \geometry{twoside=true, head=13pt, foot=2pc,
420     paperwidth=8.5in, paperheight=11in,
421     includeheadfoot, columnsep=24pt,
422     top=52pt, bottom=75pt, inner=52pt, outer=52pt
423 }%
424 \or % sigconf
425 \geometry{twoside=true, head=13pt,
426     paperwidth=8.5in, paperheight=11in,
427     includeheadfoot, columnsep=2pc,
428     top=57pt, bottom=73pt, inner=54pt, outer=54pt
429 }%
430 \or % siggraph
431 \geometry{twoside=true, head=13pt,
432     paperwidth=8.5in, paperheight=11in,
433     includeheadfoot, columnsep=2pc,
434     top=57pt, bottom=73pt, inner=54pt, outer=54pt
435 }%
436 \or % sigplan
437 \geometry{twoside=true, head=13pt,
438     paperwidth=8.5in, paperheight=11in,
439     includeheadfoot=false, columnsep=2pc,
440     top=1in, bottom=1in, inner=0.75in, outer=0.75in
441 }%
442 \or % sigchi
443 \geometry{twoside=true, head=13pt,
444     paperwidth=8.5in, paperheight=11in,
445     includeheadfoot, columnsep=2pc,
446     top=66pt, bottom=73pt, inner=54pt, outer=54pt
447 }%
448 \or % sigchi-a
449 \geometry{twoside=false, head=13pt,
450     paperwidth=11in, paperheight=8.5in,
451     includeheadfoot, marginparsep=72pt,
452     marginparwidth=170pt, columnsep=20pt,
453     top=72pt, bottom=72pt, left=314pt, right=72pt
454 }%
455 \@mparswitchfalse
456 \reversemarginpar
457 \fi

```

\parindent Paragraphing

```

\parskip 458 \setlength\parindent{10\p@}
459 \setlength\parskip{\z@}
460 \ifcase\ACM@format@nr

```

```

461 \relax % manuscript
462 \or % acmsmall
463 \or % acmlarge
464 \or % acmtog
465 \setlength\parindent{9\p@}%
466 \or % sigconf
467 \or % siggraph
468 \or % sigplan
469 \or % sigchi
470 \or % sigchi-a
471 \fi

```

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.

```

472 \def\copyrightpermissionfootnoterule{\kern-3\p@
473 \hrule \@width \columnwidth \kern 2.6\p@}

474 \RequirePackage{manyfoot}
475 \SelectFootnoteRule[2]{copyrightpermission}
476 \DeclareNewFootnote{copyrightpermission}

```

`\footnoterule` Tschichold’s rules:

```

477 \def\footnoterule{\kern-3\p@
478 \hrule \@width 4pc \kern 2.6\p@}

```

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

```

479 \def\endminipage{%
480 \par
481 \unskip
482 \ifvoid\@mpfootins\else
483 \vskip\skip\@mpfootins
484 \normalcolor
485 \unvbox\@mpfootins
486 \fi
487 \@minipagefalse %% added 24 May 89
488 \color@endgroup
489 \egroup
490 \expandafter\@iiiparbox\@mpargs{\unvbox\@tempboxa}}

```

`\@makefnmark` We do not use indentation for footnotes

```

491 \def\@makefnmark{\noindent\@makefnmark}

```

`\@footnotetext` In sigchi-a mode our footnotes are on the margins!

```
492 \if@ACM@sigchiamode
493 \long\def\@footnotetext#1{\marginpar{%
494   \reset@font\small
495   \interlinepenalty\interfootnotelinepenalty
496   \protected@edef\@currentlabel{%
497     \csname p@footnote\endcsname\@thefnmark
498   }%
499   \color@begingroup
500     \makefnmark{%
501       \rule{z@footnotesep}{\ignorespaces#1\@finalstrut\strutbox}%
502     \color@endgroup}}%
503 \fi
```

`\@mpfootnotetext` We want the footnotes in minipages centered:

```
504 \long\def\@mpfootnotetext#1{%
505   \global\setbox\@mpfootins\vbox{%
506     \unvbox\@mpfootins
507     \reset@font\footnotesize
508     \hsize\columnwidth
509     \@parboxrestore
510     \protected@edef\@currentlabel
511       {\csname p@mpfootnote\endcsname\@thefnmark}%
512     \color@begingroup\centering
513       \makefnmark{%
514         \rule{z@footnotesep}{\ignorespaces#1\@finalstrut\strutbox}%
515       \color@endgroup}}
```

`\@makefnmark` AMS classes use a buggy definition of `\makefnmark`. We revert to the standard one.

```
516 \def\@makefnmark{\hbox{\@textsuperscript{\normalfont\@thefnmark}}}
```

### 3.6 Fonts

`\if@ACM@newfonts` Whether we load the new fonts

```
517 \newif\if@ACM@newfonts
518 \@ACM@newfontstrue
519 \IfFileExists{libertine.sty}{\ClassWarning{\@classname}{You do not
520   have libertine package installed. Please upgrade your
521   TeX}\@ACM@newfontsfalse}
522 \IfFileExists{zi4.sty}{\ClassWarning{\@classname}{You do not
523   have zi4 package installed. Please upgrade your TeX}\@ACM@newfontsfalse}
524 \IfFileExists{newtxmath.sty}{\ClassWarning{\@classname}{You do not
525   have newtxmath package installed. Please upgrade your
526   TeX}\@ACM@newfontsfalse}
```

We use Libertine throughout.

```
527 \if@ACM@newfonts
528 \RequirePackage[tt=false]{libertine}
529 \RequirePackage[varqu]{zi4}
```

```

530 \RequirePackage[libertine]{newtxmath}
531 \RequirePackage[T1]{fontenc}
532 \fi

    The SIGCHI extended abstracts are sans serif:
533 \if@ACM@sigchiamode
534   \renewcommand{\familydefault}{\sfdefault}
535 \fi

```

### 3.7 Floats

We use caption package

```

536 \RequirePackage{caption, float}
537 \captionsetup[table]{position=top}
538 \if@ACM@journal
539   \captionsetup{labelfont={sf, small},
540     textfont={sf, small}, margin=\z@}
541   \captionsetup[figure]{name={Fig.}}
542 \else
543   \captionsetup{labelfont={bf},
544     textfont={bf}, labelsep=colon, margin=\z@}
545   \ifcase\ACM@format@nr
546     \relax % manuscript
547     \or % acmsmall
548     \or % acmlarge
549     \or % acmtog
550     \or % sigconf
551     \or % siggraph
552     \captionsetup{textfont={it}}
553     \or % sigplan
554     \captionsetup{labelfont={bf},
555       textfont={normalfont}, labelsep=period, margin=\z@}
556     \or % sigchi
557     \captionsetup[figure]{labelfont={bf, small},
558       textfont={bf, small}}
559     \or % sigchi-a
560     \captionsetup[figure]{labelfont={bf, small},
561       textfont={bf, small}}
562   \fi
563 \fi

```

sidebar The sidebar environment:

```

564 \newfloat{sidebar}{}{sbar}
565 \floatname{sidebar}{Sidebar}
566 \renewenvironment{sidebar}{\Collect@Body\@sidebar}{}

```

\@sidebar The processing of the saved text

```

567 \long\def\@sidebar#1{\bgroup\captionsetup{type=sidebar}%
568   \marginpar{\small#1}\egroup}

```

`marginfigure` The `marginfigure` environment:

```
569 \newenvironment{marginfigure}{\Collect@Body\@marginfigure}{}
```

`\@marginfigure` The processing of the saved text

```
570 \long\def\@marginfigure#1{\bgroup\captionsetup{type=figure}%
571   \marginpar{\centering\small#1}\egroup}
```

`marginfigure` The `marginfigure` environment:

```
572 \newenvironment{marginfigure}{\Collect@Body\@marginfigure}{}
```

`\@marginfigure` The processing of the saved text

```
573 \long\def\@marginfigure#1{\bgroup\captionsetup{type=figure}%
574   \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

```
575 \newdimen\fulltextwidth
576 \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)

```
577 \if@ACM@sigchiamode
578 \def\@dblfloat{\bgroup\columnwidth=\fulltextwidth
579   \let\@endfloatbox\@endwidefloatbox
580   \def\@fpsadddefault{\def\@fps{tp}}%
581   \@float}
582 \fi
```

`\enddblfloat` And the end. Just adding a `\bgroup`.

```
583 \if@ACM@sigchiamode
584 \def\enddblfloat{%
585   \endfloat\egroup}
586 \fi
```

`\@endwidefloatbox` This is the end of a wide box - we basically move everything to the left

```
587 \def\@endwidefloatbox{%
588   \par\vskip\z@skip
589   \@minipagefalse
590   \outer@nobreak
591   \egroup
592   \color@endbox
593   \global\setbox\@currbox=\vbox{\moveleft
594     \dimexpr(\fulltextwidth-\textwidth)\box\@currbox}%
595   \wd\@currbox=\textwidth
596 }
```

### 3.8 Lists

```

597 \ifcase\ACM@format@nr
598 \relax % manuscript
599 \or % acmsmall
600 \or % acmlarge
601 \or % acmtog
602 \or % sigconf
603 \or % siggraph
604 \or % sigplan
605 \def\labelenumi{\theenumi.}
606 \def\labelenumii{\theenumii.}
607 \def\labelenumiii{\theenumiii.}
608 \def\labelenumiv{\theenumiv.}
609 \or % sigchi
610 \or % sigchi-a
611 \fi

```

\descriptionlabel We do not use default colon as \amsart does:

```

612 \renewcommand{\descriptionlabel}[1]{\hspace\labelsep \upshape\bfseries #1}

```

\description AMS uses additional indent of 6pt. Frank recommends dropping it.

```

613 \renewenvironment{description}{\list{}{\%
614     \itemindent-12\p@
615     \labelwidth\z@ \let\makelabel\descriptionlabel}\%
616 }{
617     \endlist
618 }
619 \let\enddescription=\endlist % for efficiency

```

### 3.9 Top matter data

We use keyval interface to define journal title and relevant information

```

620 \define@choicekey*+{ACM}{acmJournal}[\@journalCode\@journalCode@nr]{\%
621     CIE,%
622     CSUR,%
623     IMWUT,%
624     JACM,%
625     JDIQ,%
626     JEA,%
627     JERIC,%
628     JETC,%
629     JOCCH,%
630     PACMPL,%
631     TAAS,%
632     TACCESS,%
633     TACO,%
634     TALG,%
635     TALLIP,%
636     TAP,%

```

```

637 TCPS,%
638 TEAC,%
639 TECS,%
640 TIIS,%
641 TISSEC,%
642 TIST,%
643 TKDD,%
644 TMIS,%
645 TOCE,%
646 TOCHI,%
647 TOCL,%
648 TOCS,%
649 TOCT,%
650 TODAES,%
651 TODS,%
652 TOG,%
653 TOIS,%
654 TOIT,%
655 TOMACS,%
656 TOMM,%
657 TOMPECS,%
658 TOMS,%
659 TOPC,%
660 TOPS,%
661 TOPLAS,%
662 TOS,%
663 TOSEM,%
664 TOSN,%
665 TRETs,%
666 TSAS,%
667 TSC,%
668 TSLP,%
669 TWEB%
670 }{%
671 \ifcase\@journalCode@nr
672 \relax % CIE
673 \def\@journalName{ACM Computers in Entertainment}%
674 \def\@journalNameShort{ACM Comput. Entertain.}%
675 \def\@permissionCodeOne{1544-3574}%
676 \or % CSUR
677 \def\@journalName{ACM Computing Surveys}%
678 \def\@journalNameShort{ACM Comput. Surv.}%
679 \def\@permissionCodeOne{0360-0300}%
680 \or % IMWUT
681 \def\@journalName{Proceedings of the ACM on Interactive, Mobile,
682 Wearable and Ubiquitous Technologies}%
683 \def\@journalNameShort{Proc. ACM Interact. Mob. Wearable Ubiquitous Technol.}%
684 \def\@permissionCodeOne{2474-9567}%
685 \or % JACM
686 \def\@journalName{Journal of the ACM}%

```

```

687 \def\@journalNameShort{J. ACM}%
688 \def\@permissionCodeOne{0004-5411}%
689 \or % JDIQ
690 \def\@journalName{ACM Journal of Data and Information Quality}%
691 \def\@journalNameShort{ACM J. Data Inform. Quality}%
692 \def\@permissionCodeOne{1936-1955}%
693 \or % JEA
694 \def\@journalName{ACM Journal of Experimental Algorithmics}%
695 \def\@journalNameShort{ACM J. Exp. Algor.}%
696 \def\@permissionCodeOne{1084-6654}%
697 \or % JERIC
698 \def\@journalName{ACM Journal of Educational Resources in Computing}%
699 \def\@journalNameShort{ACM J. Edu. Resources in Comput.}%
700 \def\@permissionCodeOne{1073-0516}%
701 \or % JETC
702 \def\@journalName{ACM Journal on Emerging Technologies in Computing Systems}%
703 \def\@journalNameShort{ACM J. Emerg. Technol. Comput. Syst.}%
704 \def\@permissionCodeOne{1550-4832}%
705 \or % JOCCH
706 \def\@journalName{ACM Journal on Computing and Cultural Heritage}%
707 \def\@journalName{ACM J. Comput. Cult. Herit.}%
708 \or % PACMPL
709 \def\@journalName{Proceedings of the ACM on Programming Languages}%
710 \def\@journalName{Proc. ACM Program. Lang.}%
711 \def\@permissionCodeOne{2475-1421}%
712 \or % TAAS
713 \def\@journalName{ACM Transactions on Autonomous and Adaptive Systems}%
714 \def\@journalNameShort{ACM Trans. Autonom. Adapt. Syst.}%
715 \def\@permissionCodeOne{1556-4665}%
716 \or % TACCESS
717 \def\@journalName{ACM Transactions on Accessible Computing}%
718 \def\@journalNameShort{ACM Trans. Access. Comput.}%
719 \def\@permissionCodeOne{1936-7228}%
720 \or % TACO
721 \def\@journalName{ACM Transactions on Architecture and Code Optimization}%
722 \or % TALG
723 \def\@journalName{ACM Transactions on Algorithms}%
724 \def\@journalNameShort{ACM Trans. Algor.}%
725 \def\@permissionCodeOne{1549-6325}%
726 \or % TALLIP
727 \def\@journalName{ACM Transactions on Asian and Low-Resource Language Information Processing}%
728 \def\@journalNameShort{ACM Trans. Asian Low-Resour. Lang. Inf. Process.}%
729 \def\@permissionCodeOne{2375-4699}%
730 \or % TAP
731 \def\@journalName{ACM Transactions on Applied Perception}%
732 \or % TCPS
733 \def\@journalName{ACM Transactions on Cyber-Physical Systems}%
734 \or % TEAC
735 \def\@journalName{ACM Transactions on Economics and Computation}%
736 \or % TECS

```



```

737 \def\@journalName{ACM Transactions on Embedded Computing Systems}%
738 \def\@journalNameShort{ACM Trans. Embedd. Comput. Syst.}%
739 \def\@permissionCodeOne{1539-9087}%
740 \or % TIIS
741 \def\@journalName{ACM Transactions on Interactive Intelligent Systems}%
742 \def\@journalNameShort{ACM Trans. Interact. Intell. Syst.}%
743 \def\@permissionCodeOne{2160-6455}%
744 \or % TISSEC
745 \def\@journalName{ACM Transactions on Information and System Security}%
746 \def\@journalNameShort{ACM Trans. Info. Syst. Sec.}%
747 \def\@permissionCodeOne{1094-9224}%
748 \or % TIST
749 \def\@journalName{ACM Transactions on Intelligent Systems and Technology}%
750 \def\@journalNameShort{ACM Trans. Intell. Syst. Technol.}%
751 \def\@permissionCodeOne{2157-6904}%
752 \or % TKDD
753 \def\@journalName{ACM Transactions on Knowledge Discovery from Data}%
754 \def\@journalNameShort{ACM Trans. Knowl. Discov. Data.}%
755 \def\@permissionCodeOne{1556-4681}%
756 \or % TMIS
757 \def\@journalName{ACM Transactions on Management Information Systems}%
758 \def\@journalNameShort{ACM Trans. Manag. Inform. Syst.}%
759 \def\@permissionCodeOne{2158-656X}%
760 \or % TOCE
761 \def\@journalName{ACM Transactions on Computing Education}%
762 \def\@journalNameShort{ACM Trans. Comput. Educ.}%
763 \def\@permissionCodeOne{1946-6226}%
764 \or % TOCHI
765 \def\@journalName{ACM Transactions on Computer-Human Interaction}%
766 \def\@journalNameShort{ACM Trans. Comput.-Hum. Interact.}%
767 \def\@permissionCodeOne{1073-0516}%
768 \or % TOCL
769 \def\@journalName{ACM Transactions on Computational Logic}%
770 \def\@journalNameShort{ACM Trans. Comput. Logic}%
771 \def\@permissionCodeOne{1529-3785}%
772 \or % TOCS
773 \def\@journalName{ACM Transactions on Computer Systems}%
774 \def\@journalNameShort{ACM Trans. Comput. Syst.}%
775 \def\@permissionCodeOne{0734-2071}%
776 \or % TOCT
777 \def\@journalName{ACM Transactions on Computation Theory}%
778 \def\@journalNameShort{ACM Trans. Comput. Theory}%
779 \def\@permissionCodeOne{1942-3454}%
780 \or % TODAES
781 \def\@journalName{ACM Transactions on Design Automation of Electronic Systems}%
782 \def\@journalNameShort{ACM Trans. Des. Autom. Electron. Syst.}%
783 \def\@permissionCodeOne{1084-4309}%
784 \or % TODS
785 \def\@journalName{ACM Transactions on Database Systems}%
786 \def\@journalNameShort{ACM Trans. Datab. Syst.}%

```

```

787 \def\@permissionCodeOne{0362-5915}%
788 \or % TOG
789 \def\@journalName{ACM Transactions on Graphics}%
790 \def\@journalNameShort{ACM Trans. Graph.}%
791 \def\@permissionCodeOne{0730-0301}%
792 \or % TOIS
793 \def\@journalName{ACM Transactions on Information Systems}%
794 \def\@journalName{ACM Transactions on Information Systems}%
795 \def\@permissionCodeOne{1046-8188}%
796 \or % TOIT
797 \def\@journalName{ACM Transactions on Internet Technology}%
798 \def\@journalNameShort{ACM Trans. Internet Technol.}%
799 \def\@permissionCodeOne{1533-5399}%
800 \or % TOMACS
801 \def\@journalName{ACM Transactions on Modeling and Computer Simulation}%
802 \def\@journalName{ACM Transactions on Modeling and Computer Simulation}%
803 \def\@journalNameShort{ACM Trans. Model. Comput. Simul.}%
804 \or % TOMM
805 \def\@journalName{ACM Transactions on Multimedia Computing, Communications and Applications}%
806 \def\@journalNameShort{ACM Trans. Multimedia Comput. Commun. Appl.}%
807 \def\@permissionCodeOne{1551-6857}%
808 \def\@permissionCodeTwo{0100}%
809 \or % TOMPECS
810 \def\@journalName{ACM Transactions on Modeling and Performance Evaluation of Computing Systems}%
811 \def\@journalNameShort{ACM Trans. Model. Perform. Eval. Comput. Syst.}%
812 \def\@permissionCodeOne{2376-3639}%
813 \or % TOMS
814 \def\@journalName{ACM Transactions on Mathematical Software}%
815 \def\@journalNameShort{ACM Trans. Math. Softw.}%
816 \def\@permissionCodeOne{0098-3500}%
817 \or % TOPC
818 \def\@journalName{ACM Transactions on Parallel Computing}%
819 \def\@journalNameShort{ACM Trans. Parallel Comput.}%
820 \def\@permissionCodeOne{1539-9087}%
821 \or % TOPS
822 \def\@journalName{ACM Transactions on Privacy and Security}%
823 \def\@journalNameShort{ACM Trans. Priv. Sec.}%
824 \def\@permissionCodeOne{2471-2566}%
825 \or % TOPLAS
826 \def\@journalName{ACM Transactions on Programming Languages and Systems}%
827 \def\@journalNameShort{ACM Trans. Program. Lang. Syst.}%
828 \def\@permissionCodeOne{0164-0925}%
829 \or % TOS
830 \def\@journalName{ACM Transactions on Storage}%
831 \def\@journalNameShort{ACM Trans. Storage}%
832 \def\@permissionCodeOne{1553-3077}%
833 \or % TOSEM
834 \def\@journalName{ACM Transactions on Software Engineering and Methodology}%
835 \def\@journalNameShort{ACM Trans. Softw. Eng. Methodol.}%
836 \def\@permissionCodeOne{1049-331X}%

```

```

837 \or % TOSN
838 \def\@journalName{ACM Transactions on Sensor Networks}%
839 \def\@journalNameShort{ACM Trans. Sensor Netw.}%
840 \def\@permissionCodeOne{1550-4859}%
841 \or % TRET
842 \def\@journalName{ACM Transactions on Reconfigurable Technology and Systems}%
843 \def\@journalNameShort{ACM Trans. Reconfig. Technol. Syst.}%
844 \def\@permissionCodeOne{1936-7406}%
845 \or % TSAS
846 \def\@journalName{ACM Transactions on Spatial Algorithms and Systems}%
847 \def\@journalNameShort{ACM Trans. Spatial Algorithms Syst.}%
848 \def\@permissionCodeOne{2374-0353}%
849 \or % TSC
850 \def\@journalName{ACM Transactions on Social Computing}%
851 \def\@journalNameShort{ACM Trans. Soc. Comput.}%
852 \def\@permissionCodeOne{2469-7818}%
853 \or % TSLP
854 \def\@journalName{ACM Transactions on Speech and Language Processing}%
855 \def\@journalNameShort{ACM Trans. Speech Lang. Process.}%
856 \def\@permissionCodeOne{1550-4875}%
857 \or % TWEB
858 \def\@journalName{ACM Transactions on the Web}%
859 \def\@journalNameShort{ACM Trans. Web}%
860 \def\@permissionCodeOne{1559-1131}%
861 \fi
862 \ClassInfo{\@classname}{Using journal code \@journalCode}%
863 }{%
864 \ClassError{\@classname}{Incorrect journal #1}%
865 }%

```

\acmJournal And the syntactic sugar around it

```

866 \def\acmJournal#1{\setkeys{ACM}{acmJournal=#1}}

```

The defaults:

```

867 \def\@journalCode@nr{0}
868 \def\@journalName{}%
869 \def\@journalNameShort{\@journalName}%
870 \def\@permissionCodeOne{XXXX-XXXX}%
871 \def\@permissionCodeTwo{}%

```

\acmConference This is the conference command

```

872 \newcommand\acmConference[4][{}%
873 \gdef\acmConference@shortname{#1}%
874 \gdef\acmConference@name{#2}%
875 \gdef\acmConference@date{#3}%
876 \gdef\acmConference@venue{#4}%
877 \ifx\acmConference@shortname\empty
878 \gdef\acmConference@shortname{#2}%
879 \fi}

```

```

880 \acmConference[Conference'17]{ACM Conference}{July 2017}{Washington,
881   DC, USA}

\subtitle The subtitle macro
882 \def\subtitle#1{\def\@subtitle{#1}}
883 \subtitle{}

\num@authorgroups The total number of “groups”. Each group is several authors with the same affiliations(s)
884 \newcount\num@authorgroups
885 \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
886 \renewcommand\author[2][{}%
887   \if@insideauthorgroup\else
888     \global\advance\num@authorgroups by 1\relax
889     \global\@insideauthorgrouptrue
890   \fi
891   \ifx\addresses\@empty
892     \if@ACM@anonymous
893       \gdef\addresses{\@author{Anonymous Author(s)}}%
894       \gdef\authors{Anonymous Author(s)}%
895     \else
896       \gdef\addresses{\@author{#2}}%
897       \gdef\authors{#2}%
898     \fi
899   \else
900     \if@ACM@anonymous\else
901       \g@addto@macro\addresses{\and\@author{#2}}%
902       \g@addto@macro\authors{\and#2}%
903     \fi
904   \fi
905   \if@ACM@anonymous
906     \ifx\shortauthors\@empty
907       \gdef\shortauthors{Anon.}%
908     \fi
909   \else
910     \def\@tempa{#1}%
911     \ifx\@tempa\@empty
912       \ifx\shortauthors\@empty
913         \gdef\shortauthors{#2}%
914       \else
915         \g@addto@macro\shortauthors{\and#2}%
916       \fi
917     \else
918       \ifx\shortauthors\@empty
919         \gdef\shortauthors{#1}%

```

```

920     \else
921         \g@addto@macro\shortauthors{\and#1}%
922     \fi
923 \fi
924 \fi}

\affiliation The macro \affiliation mimics \address from amsart. Note that it has an optional
argument we do not currently need, but keep for the possible future use.
925 \newcommand{\affiliation}[2][{}]{%
926     \global\@insideauthorgroupfalse
927     \if@ACM@anonymous\else
928         \g@addto@macro\addresses{\affiliation{#1}{#2}}%
929     \fi}

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

\orcid Right now we do not typeset orcid's gobble

\@titlenotes The titlenotes
934 \def\@titlenotes{}

\titlenote Adding note to the title
935 \def\titlenote#1{%
936     \g@addto@macro\@title{\footnotemark}%
937     \if@ACM@anonymous
938         \g@addto@macro\@titlenotes{%
939             \stepcounter{footnote}\footnotetext{Title note}}%
940     \else
941         \g@addto@macro\@titlenotes{\stepcounter{footnote}\footnotetext{#1}}%
942     \fi}

\@subtitlenotes The subtitlenotes
943 \def\@subtitlenotes{}

\subtitlenote Adding note to the subtitle
944 \def\subtitlenote#1{%
945     \g@addto@macro\@subtitle{\footnotemark}%
946     \if@ACM@anonymous
947         \g@addto@macro\@subtitlenotes{%
948             \stepcounter{footnote}\footnotetext{Subtitle note}}%
949     \else
950         \g@addto@macro\@subtitlenotes{%
951             \stepcounter{footnote}\footnotetext{#1}}%
952     \fi}

```

`\@authornotes` The authornotes  
953 `\def\@authornotes{}`

`\authornote` Adding note to the author  
954 `\def\authornote#1{%`  
955 `\if@ACM@anonymous\else`  
956 `\g@addto@macro\addresses{\@authornotemark}`  
957 `\g@addto@macro\@authornotes{%`  
958 `\stepcounter{footnote}\footnotetext{#1}}%`  
959 `\fi}`

`\acmVolume` The current volume  
960 `\def\acmVolume#1{\def\@acmVolume{#1}}`  
961 `\acmVolume{1}`

`\acmNumber` The current number  
962 `\def\acmNumber#1{\def\@acmNumber{#1}}`  
963 `\acmNumber{1}`

`\acmArticle` The current article  
964 `\def\acmArticle#1{\def\@acmArticle{#1}}`  
965 `\acmArticle{1}`

`\acmArticleSeq` The sequence number  
966 `\def\acmArticleSeq#1{\def\@acmArticleSeq{#1}}`  
967 `\acmArticleSeq{\@acmArticle}`

`\acmYear` The current year  
968 `\def\acmYear#1{\def\@acmYear{#1}}`  
969 `\acmYear{2017}`

`\acmMonth` The current month  
970 `\def\acmMonth#1{\def\@acmMonth{#1}}`  
971 `\acmMonth{1}`

`\@acmPubDate` The publication date  
972 `\def\@acmPubDate{\ifcase\@acmMonth\or`  
973 `January\or February\or March\or April\or May\or June\or`  
974 `July\or August\or September\or October\or November\or`  
975 `December\fi~\@acmYear}`

`\acmPrice` The price  
976 `\def\acmPrice#1{\def\@acmPrice{#1}}`  
977 `\acmPrice{15.00}`

`\acmISBN` The book isbn  
978 `\def\acmISBN#1{\def\@acmISBN{#1}}`  
979 `\acmISBN{978-x-xxxx-xxxx-x/YY/MM}`

<code>\acmDOI</code>	The paper doi <pre> 980 \def\acmDOI#1{\def\@acmDOI{#1}} 981 \acmDOI{10.1145/nnnnnnn.nnnnnnn} </pre>
<code>\if@ACM@badge</code>	Whether to print badge. Note that either left or right badge triggers it: <pre> 982 \newif\if@ACM@badge 983 \@ACM@badgefalse </pre>
<code>\@ACM@badge@width</code>	The width of the badge <pre> 984 \newlength\@ACM@badge@width 985 \setlength\@ACM@badge@width{5pc} </pre>
<code>\@ACM@title@width</code>	The width of the badge <pre> 986 \newlength\@ACM@title@width </pre>
<code>\@ACM@badge@skip</code>	The space between the badge and the title <pre> 987 \newlength\@ACM@badge@skip 988 \setlength\@ACM@badge@skip{1pc} </pre>
<code>\acmBadgeR</code>	Setting the right badge <pre> 989 \newcommand\acmBadgeR[2][\@ACM@badgetrue 990   \def\@acmBadgeR@url{#1}% 991   \def\@acmBadgeR@image{#2}} 992 \def\@acmBadgeR@url{} 993 \def\@acmBadgeR@image{} </pre>
<code>\acmBadgeL</code>	Setting the left badge <pre> 994 \newcommand\acmBadgeL[2][\@ACM@badgetrue 995   \def\@acmBadgeL@url{#1}% 996   \def\@acmBadgeL@image{#2}} 997 \def\@acmBadgeL@url{} 998 \def\@acmBadgeL@image{} </pre>
<code>\startPage</code>	The start page of the paper <pre> 999 \def\startPage#1{\def\@startPage{#1}} 1000 \startPage{} </pre>
<code>\terms</code>	Terms are mostly obsolete, we use CCS now. Still it makes sense to keep them for compatibility. <pre> 1001 \def\terms#1{\def\@terms{#1}} 1002 \terms{} </pre>
<code>\keywords</code>	Keywords are mostly obsolete, we use CCS now. Still it makes sense to keep them for compatibility. <pre> 1003 \def\keywords#1{\def\@keywords{#1}} 1004 \keywords{} </pre>

```

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
          1005 \renewenvironment{abstract}{\Collect@Body\@saveabstract}{\}

\@saveabstract  And saving the abstract
                1006 \long\def\@saveabstract#1{\long\gdef\@abstract{#1}}
                1007 \@saveabstract{\}

\@empty  The long version of \@empty (to compare with \@abstract)
          1008 \long\def\@empty{\}

\if@ACM@printccs  Whether to print CCS
                  1009 \define@boolkey+{@ACM@topmatter@}[@ACM@]{printccs}[true]{%
                  1010   \if@ACM@printccs
                  1011     \ClassInfo{\@classname}{Printing CCS}%
                  1012   \else
                  1013     \ClassInfo{\@classname}{Suppressing CCS}%
                  1014   \fi}{\ClassError{\@classname}{printccs must be true or false}}

\if@ACM@printacmref  Whether to print ACM bib
                     1015 \define@boolkey+{@ACM@topmatter@}[@ACM@]{printacmref}[true]{%
                     1016   \if@ACM@printacmref
                     1017     \ClassInfo{\@classname}{Printing bibformat}%
                     1018   \else
                     1019     \ClassInfo{\@classname}{Suppressing bibformat}%
                     1020   \fi}{\ClassError{\@classname}{printacmref must be true or false}}

\if@ACM@printfolios  Whether to print folios
                     1021 \define@boolkey+{@ACM@topmatter@}[@ACM@]{printfolios}[true]{%
                     1022   \if@ACM@printfolios
                     1023     \ClassInfo{\@classname}{Printing folios}%
                     1024   \else
                     1025     \ClassInfo{\@classname}{Suppressing folios}%
                     1026   \fi}{\ClassError{\@classname}{printfolios must be true or false}}

\settopmatter  The usual syntactic sugar
               1027 \def\settopmatter#1{\setkeys{@ACM@topmatter@}{#1}}

               Now the settings
               1028 \settopmatter{printccs=true, printacmref=true}
               1029 \if@ACM@manuscript
               1030   \settopmatter{printfolios=true}
               1031 \else
               1032   \if@ACM@journal
               1033     \settopmatter{printfolios=true}
               1034   \else
               1035     \settopmatter{printfolios=false}
               1036   \fi
               1037 \fi

```



\@received The container for the paper history

```
1038 \def\@received{}
```

\received The \received command

```
1039 \newcommand\received[2][\def\@tempa{#1}%
1040   \ifx\@tempa\@empty
1041     \ifx\@received\@empty
1042       \gdef\@received{Received #2}%
1043     \else
1044       \g@addto@macro{\@received}{; revised #2}%
1045     \fi
1046   \else
1047     \ifx\@received\@empty
1048       \gdef\@received{#1 #2}%
1049     \else
1050       \g@addto@macro{\@received}{; #1 #2}%
1051     \fi
1052   \fi}
1053 \AtEndDocument{%
1054   \ifx\@received\@empty\else
1055     \par\bigskip\noindent\small\normalfont\@received\par
1056   \fi}
```

### 3.10 Concepts system

We exclude CCSXML stuff generated by the ACM system:

```
1057 \RequirePackage{comment}
1058 \excludecomment{CCSXML}
```

\@concepts This is the storage macro for concepts

```
1059 \let\@concepts\@empty
```

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

```
1060 \newcommand\ccsdesc[2][100]{%
1061   \ccsdesc@parse#1~#2~}
```

\ccsdesc@parse The parser of the expression Significance~General~Specific (we need textcomp for \textrightarrow:

```
1062 \RequirePackage{textcomp}
1063 \def\ccsdesc@parse#1~#2~#3~{%
1064   \expandafter\ifx\csname CCS@#2\endcsname\relax
1065     \expandafter\gdef\csname CCS@#2\endcsname{\textbullet\ \textbf{#2} \textrightarrow\ }%
1066     \g@addto@macro{\@concepts}{\csname CCS@#2\endcsname}\fi
1067   \expandafter\g@addto@macro\expandafter{\csname CCS@#2\endcsname}{%
1068     \ifnum#1>499\textbf{#3}; \else
1069     \ifnum#1>299\textit{#3}; \else
1070     #3; \fi\fi}}
```

### 3.11 Copyright system

This is from acmcopyright.sty

`\if@printcopyright` A flag whether to print copyright symbol  
1071 `\newif\if@printcopyright`  
1072 `\@printcopyrighttrue`

`\if@printpermission` Whether to print permission block  
1073 `\newif\if@printpermission`  
1074 `\@printpermissiontrue`

`\if@acmowned` Whether ACM owns the rights to the paper  
1075 `\newif\if@acmowned`  
1076 `\@acmownedtrue`

Keys:

```
1077 \define@choicekey*{ACM@}{acmcopyrightmode}[%  
1078   \acm@copyrightinput\acm@copyrightmode]{none,acmcopyright,acmlicensed,%  
1079   rightsretained,usgov,usgovmixed,cagov,cagovmixed,%  
1080   licensedusgovmixed,licensedcagovmixed,othergov,licensedothergov}{%  
1081   \@printpermissiontrue  
1082   \@printcopyrighttrue  
1083   \@acmownedtrue  
1084   \ifnum\acm@copyrightmode=0\relax % none  
1085     \@printpermissionfalse  
1086     \@printcopyrightfalse  
1087     \@acmownedfalse  
1088   \fi  
1089   \ifnum\acm@copyrightmode=2\relax % acmlicensed  
1090     \@acmownedfalse  
1091   \fi  
1092   \ifnum\acm@copyrightmode=3\relax % rightsretained  
1093     \@acmownedfalse  
1094   \fi  
1095   \ifnum\acm@copyrightmode=4\relax % usgov  
1096     \@printpermissiontrue  
1097     \@printcopyrightfalse  
1098     \@acmownedfalse  
1099   \fi  
1100   \ifnum\acm@copyrightmode=6\relax % cagov  
1101     \@acmownedfalse  
1102   \fi  
1103   \ifnum\acm@copyrightmode=8\relax % licensedusgovmixed  
1104     \@acmownedfalse  
1105   \fi  
1106   \ifnum\acm@copyrightmode=9\relax % licensedcagovmixed  
1107     \@acmownedfalse  
1108   \fi  
1109   \ifnum\acm@copyrightmode=10\relax % othergov
```

```

1110 \acmownedtrue
1111 \fi
1112 \ifnum\acm@copyrightmode=11\relax % licensedothergov
1113 \acmownedfalse
1114 \fi}

\setcopyright This is the syntactic sugar around setting keys.
1115 \def\setcopyright#1{\setkeys{ACM@}{acmcopyrightmode=#1}}
1116 \setcopyright{acmcopyright}

\@copyrightowner Here is the owner of the copyright
1117 \def\@copyrightowner{%
1118 \ifcase\acm@copyrightmode\relax % none
1119 \or % acmcopyright
1120 ACM\@.
1121 \or % acmlicensed
1122 Copyright held by the owner/author(s). Publication rights licensed to
1123 ACM\@.
1124 \or % rightsretained
1125 Copyright held by the owner/author(s).
1126 \or % usgov
1127 \or % usgovmixed
1128 ACM\@.
1129 \or % cagov
1130 Crown in Right of Canada.
1131 \or %cagovmixed
1132 ACM\@.
1133 \or %licensedusgovmixed
1134 Copyright held by the owner/author(s). Publication rights licensed to
1135 ACM\@.
1136 \or %licensedcagovmixed
1137 Copyright held by the owner/author(s). Publication rights licensed to
1138 ACM\@.
1139 \or % othergov
1140 ACM\@.
1141 \or % licensedothergov
1142 Copyright held by the owner/author(s). Publication rights licensed to
1143 ACM\@.
1144 \fi}

\@formatdoi Print a clickable doi
1145 \def\@formatdoi#1{\url{http://dx.doi.org/#1}}

\@copyrightpermission The canned permission block.
1146 \def\@copyrightpermission{%
1147 \ifcase\acm@copyrightmode\relax % none
1148 \or % acmcopyright
1149 Permission to make digital or hard copies of all or part of this
1150 work for personal or classroom use is granted without fee provided

```

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1184 \or % usgovmixed

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1196 \or % cagov

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 1210 \or % cagovmixed  
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 1246 retains a nonexclusive, royalty-free right to publish or reproduce  
 1247 this article, or to allow others to do so, for Government purposes  
 1248 only.  
 1249 \fi}

`\copyrightyear` By default, the copyright year is the same as `\acmYear`, but one can override this:

```

1250 \def\copyrightyear#1{\def\@copyrightyear{#1}}
1251 \copyrightyear{\@acmYear}

\@teaserfigures The teaser figures container
1252 \def\@teaserfigures{}

teaserfigure The teaser figure
1253 \newenvironment{teaserfigure}{\Collect@Body\@saveteaser}{}

\@saveteaser Saving the teaser
1254 \long\def\@saveteaser#1{\g@addto@macro\@teaserfigures{\@teaser{#1}}}}

\thanks We redefine amsart \thanks, so the anonymous key works
1255 \renewcommand{\thanks}[1]{%
1256   \ifnotempty{#1}{%
1257     \if@ACM@anonymous
1258       \g@addto@macro\thankses{\thanks{A note}}}%
1259   \else
1260     \g@addto@macro\thankses{\thanks{#1}}}%
1261   \fi}}
```

### 3.12 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>]`.

```

1262 \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 copy-
right/permission block. By the way, this was the default behavior of the old ACM classes.
1263 \def\maketitle{%
1264   \if@ACM@anonymous
1265     % Anonymize omission of \author-s
1266     \ifnum\num@authorgroups=0\author{}\fi
1267   \fi
1268   \begingroup
1269   \let\@footnotemark\@footnotemark@nolink
1270   \let\@footnotetext\@footnotetext@nolink
1271   \renewcommand\thefootnote{\@fnsymbol\c@footnote}%
1272   \@topnum\z@ % this prevents figures from falling at the top of page
1273               % 1
1274   \hsize=\textwidth
1275   \def\@makefnmark{\hbox{\@textsuperscript{\@thefnmark}}}%
1276   \mktitle\if@ACM@sigchiamode\else\mkauthors\fi\mkteasers
1277   \@printtopmatter}
```

```

1278 \if@ACM@sigchiamode\mkauthors\fi
1279 \setcounter{footnote}{0}%
1280 \def\@makefnmark{\hbox{\@textsuperscript{\normalfont\@thefnmark}}}%
1281 \@titlenotes
1282 \@subtitlenotes
1283 \@authornotes
1284 \let\@makefnmark\relax \let\@thefnmark\relax
1285 \let\@makefntext\noindent
1286 \ifx\@empty\thankses\else
1287   \footnotetextcopyrightpermission{%
1288     \def\par{\let\par\@par}\parindent\z@\setthanks}%
1289 \fi
1290 \footnotetextcopyrightpermission{\parindent\z@\parskip0.1\baselineskip
1291 \if@ACM@authorversion\else
1292   \if@printpermission\@copyrightpermission\par\fi
1293 \fi
1294 \if@ACM@manuscript\else
1295   \if@ACM@journal\else % Print the conference short name
1296     {\itshape \acmConference@shortname, \acmConference@venue}\par
1297   \fi
1298 \fi
1299 \if@printcopyright
1300   \copyright\ \@copyrightyear\ \@copyrightowner\
1301 \else
1302   \@copyrightyear.\
1303 \fi
1304 \if@ACM@manuscript
1305   Manuscript submitted to ACM\
1306 \else
1307   \if@ACM@authorversion
1308     This is the author's version of the work. It is posted here for
1309     your personal use. Not for redistribution. The definitive Version
1310     of Record was published in
1311     \if@ACM@journal
1312       \emph{\@journalName}%
1313     \else
1314       \emph{Proceedings of \acmConference@name, \acmConference@date}%
1315     \fi
1316     \ifx\@acmDOI\@empty
1317       .
1318     \else
1319       , \@formatdoi{\@acmDOI}.
1320     \fi\
1321   \else
1322     \if@ACM@journal
1323       \@permissionCodeOne/\@acmYear/\@acmMonth-ART\@acmArticle\
1324       \$\@acmPrice\
1325       DOI: \nolinkurl{\@acmDOI}%
1326     \else % Conference
1327       \@acmISBN

```

```

1328         \ifx\@acmPrice\@empty.\else\dots\$\@acmPrice\fi\\
1329         DOI: \nolinkurl{\@acmDOI}%
1330     \fi
1331 \fi
1332 \fi}%
1333 \endgroup
1334 \setcounter{footnote}{0}%
1335 \@mkabstract
1336 \if@ACM@printccs
1337     \ifx\@concepts\@empty\else\bgroup
1338         {\@specialsection{CCS Concepts}%
1339         \@concepts\par}\egroup
1340     \fi
1341 \fi
1342 \if\@terms\@empty\else\bgroup
1343     {\@specialsection{General Terms}%
1344     \@terms\par}\egroup
1345 \fi
1346 \ifx\@keywords\@empty\else\bgroup
1347     {\if@ACM@journal
1348         \@specialsection{Additional Key Words and Phrases}%
1349     \else
1350         \@specialsection{Keywords}%
1351     \fi
1352     \@keywords}\par\egroup
1353 \fi
1354 \andify\authors
1355 \andify\shortauthors
1356 \global\let\authors=\authors
1357 \global\let\shortauthors=\shortauthors
1358 \if@ACM@printacmref
1359     \@mkbibcitation
1360 \fi
1361 \hypersetup{pdfauthor={\authors},
1362     pdftitle={\@title}, pdfkeywords={\@concepts}}%
1363 \@printendtopmatter
1364 \@afterindentfalse
1365 \@afterheading
1366 }

```

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

```

1367 \def\@specialsection#1{%
1368     \ifcase\ACM@format@nr
1369     \relax % manuscript
1370     \par\medskip\small\noindent#1: %
1371     \or % acmsmall
1372     \par\medskip\small\noindent#1: %
1373     \or % acmlarge
1374     \par\medskip\small\noindent#1: %
1375     \or % acmtog

```



```

1376 \par\medskip\small\noindent#1: %
1377 \or % sigconf
1378 \section*{#1}%
1379 \or % siggraph
1380 \section*{#1}%
1381 \or % sigplan
1382 \paragraph*{#1}%
1383 \or % sigchi
1384 \section*{#1}%
1385 \or % sigchi-a
1386 \section*{#1}%
1387 \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 \mktitle since we want them on the margins.

```

1388 \def\@printtopmatter{%
1389 \ifx\@startPage\@empty
1390 \gdef\@startPage{1}%
1391 \else
1392 \setcounter{page}{\@startPage}%
1393 \fi
1394 \thispagestyle{firstpagestyle}%
1395 \noindent
1396 \ifcase\ACM@format@nr
1397 \relax % manuscript
1398 \box\mktitle@bx\par
1399 \noindent\hrulefill\par
1400 \or % acmsmall
1401 \box\mktitle@bx\par
1402 \noindent\hrulefill\par
1403 \or % acmlarge
1404 \box\mktitle@bx\par
1405 \noindent\hrulefill\par
1406 \or % acmtog
1407 \twocolumn[\box\mktitle@bx]%
1408 \or % sigconf
1409 \twocolumn[\box\mktitle@bx]%
1410 \or % siggraph
1411 \twocolumn[\box\mktitle@bx]%
1412 \or % sigplan
1413 \twocolumn[\box\mktitle@bx]%
1414 \or % sigchi
1415 \twocolumn[\box\mktitle@bx]%
1416 \or % sigchi-a
1417 \par\box\mktitle@bx\par\bigskip
1418 \if@ACM@badge
1419 \marginpar{\noindent
1420 \ifx\@acmBadgeL@image\@empty\else
1421 \href{\@acmBadgeL@url}{%

```

```

1422         \includegraphics[width=\@ACM@badge@width]{\@acmBadgeL@image}}%
1423         \hskip\@ACM@badge@skip
1424     \fi
1425     \ifx\@acmBadgeR@image\@empty\else
1426         \href{\@acmBadgeR@url}{%
1427             \includegraphics[width=\@ACM@badge@width]{\@acmBadgeR@image}}%
1428         \fi}%
1429 \fi
1430 \fi
1431 }

\@mktitle The title of the article
1432 \def\@mktitle{%
1433     \ifcase\ACM@format@nr
1434     \relax % manuscript
1435     \@mktitle@i
1436     \or % acmsmall
1437     \@mktitle@i
1438     \or % acmlarge
1439     \@mktitle@i
1440     \or % acmtog
1441     \@mktitle@i
1442     \or % sigconf
1443     \@mktitle@iii
1444     \or % siggraph
1445     \@mktitle@iii
1446     \or % sigplan
1447     \@mktitle@iii
1448     \or % sigchi
1449     \@mktitle@iii
1450     \or % sigchi-a
1451     \@mktitle@iv
1452     \fi
1453 }

\@titlefont The font to typeset title
1454 \def\@titlefont{%
1455     \ifcase\ACM@format@nr
1456     \relax % manuscript
1457     \LARGE\bfseries\sffamily
1458     \or % acmsmall
1459     \LARGE\bfseries\sffamily
1460     \or % acmlarge
1461     \LARGE\bfseries\sffamily
1462     \or % acmtog
1463     \Huge\sffamily
1464     \or % sigconf
1465     \Huge\sffamily\bfseries
1466     \or % siggraph
1467     \Huge\sffamily\bfseries

```

```

1468 \or % sigplan
1469 \Huge\bfseries
1470 \or % sigchi
1471 \Huge\sffamily\bfseries
1472 \or % sigchi-a
1473 \Huge\bfseries
1474 \fi}

\@subtitlefont The font to typeset title
1475 \def\@subtitlefont{%
1476 \ifcase\ACM@format@nr
1477 \relax % manuscript
1478 \mdseries
1479 \or % acmsmall
1480 \mdseries
1481 \or % acmlarge
1482 \mdseries
1483 \or % acmtog
1484 \LARGE
1485 \or % sigconf
1486 \LARGE\mdseries
1487 \or % siggraph
1488 \LARGE\mdseries
1489 \or % sigplan
1490 \LARGE\mdseries
1491 \or % sigchi
1492 \LARGE\mdseries
1493 \or % sigchi-a
1494 \mdseries
1495 \fi}

\@mktitle@i The version of \mktitle for most journals
1496 \def\@mktitle@i{\hsize=\textwidth
1497 \ACM@title@width=\hsize
1498 \ifx\@acmBadgeL@image\@empty\else
1499 \advance\ACM@title@width by -\ACM@badge@width
1500 \advance\ACM@title@width by -\ACM@badge@skip
1501 \fi
1502 \ifx\@acmBadgeR@image\@empty\else
1503 \advance\ACM@title@width by -\ACM@badge@width
1504 \advance\ACM@title@width by -\ACM@badge@skip
1505 \fi
1506 \setbox\mktitle@bx=\vbox{\noindent\@titlefont
1507 \ifx\@acmBadgeL@image\@empty\else
1508 \raisebox{-.5\baselineskip}{\vcenter{\href{\@acmBadgeL@url}}}%
1509 \includegraphics[width=\ACM@badge@width]{\@acmBadgeL@image}}}%
1510 \hskip\ACM@badge@skip
1511 \fi
1512 \parbox[t]{\ACM@title@width}{\raggedright
1513 \@titlefont\noindent

```

```

1514     \@title
1515     \ifx\@subtitle\@empty\else
1516         \par\noindent{\@subtitlefont\@subtitle}
1517     \fi}%
1518     \ifx\@acmBadgeR@image\@empty\else
1519         \hskip\@ACM@badge@skip
1520         \raisebox{-.5\baselineskip}[\z@][\z@]{\href{\@acmBadgeR@url}{%
1521             \includegraphics[width=\@ACM@badge@width]{\@acmBadgeR@image}}}%
1522     \fi
1523     \par\bigskip}}%

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

\@mktitle@iii The version of \@mktitle 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.
1524 \def\@mktitle@iii{\hsize=\textwidth
1525     \setbox\mktitle@bx=\vbox{\@titlefont\centering
1526         \@ACM@title@width=\hsize
1527         \if@ACM@badge
1528             \advance\@ACM@title@width by -2\@ACM@badge@width
1529             \advance\@ACM@title@width by -2\@ACM@badge@skip
1530             \parbox[b]{\@ACM@badge@width}{\strut
1531                 \ifx\@acmBadgeL@image\@empty\else
1532                     \raisebox{-.5\baselineskip}[\z@][\z@]{\href{\@acmBadgeL@url}{%
1533                         \includegraphics[width=\@ACM@badge@width]{\@acmBadgeL@image}}}%
1534                 \fi}%
1535             \hskip\@ACM@badge@skip
1536         \fi
1537         \parbox[t]{\@ACM@title@width}{\centering\@titlefont
1538             \@title
1539             \ifx\@subtitle\@empty\else
1540                 \par\noindent{\@subtitlefont\@subtitle}
1541             \fi
1542         }%
1543         \if@ACM@badge
1544             \hskip\@ACM@badge@skip
1545             \parbox[b]{\@ACM@badge@width}{\strut
1546                 \ifx\@acmBadgeR@image\@empty\else
1547                     \raisebox{-.5\baselineskip}[\z@][\z@]{\href{\@acmBadgeR@url}{%
1548                         \includegraphics[width=\@ACM@badge@width]{\@acmBadgeR@image}}}%
1549                 \fi}%
1550             \fi
1551             \par\bigskip}}%

\@mktitle@iv The version of \@mktitle for sigchi-a
1552 \def\@mktitle@iv{\hsize=\textwidth
1553     \setbox\mktitle@bx=\vbox{\raggedright\leftskip5pc\@titlefont
1554         \noindent\leavevmode\leaders\hrule height 2pt\hfill\kern0pt\par
1555         \noindent\@title
1556         \ifx\@subtitle\@empty\else

```

```

1557     \par\noindent\@subtitlefont\@subtitle
1558     \fi
1559     \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.

```

1560 \newbox\@ACM@commabox
1561 \def\@ACM@addtoaddress#1{%
1562     \ifvmode\else
1563         \setbox\@ACM@commabox=\hbox{, }%
1564         \unskip\cleaders\copy\@ACM@commabox\hskip\wd\@ACM@commabox
1565     \fi
1566     #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...  
\department \affiliation.  
\streetaddress We follow the strange American tradition of no comma before zip code.

```

\city 1567 \if@ACM@journal
\state 1568     \let\position\@gobble
\postcode 1569     \def\institution#1{#1\ignorespaces}%
\country 1570     \newcommand\department[2][0]{}%
1571     \let\streetaddress\@gobble
1572     \let\city\@gobble
1573     \let\state\@gobble
1574     \let\postcode\@gobble
1575     \let\country\@gobble
1576 \else
1577     \def\position#1{#1\par}%
1578     \def\institution#1{#1\par}%
1579     \newcommand\department[2][0]{#2\par}%
1580     \def\streetaddress#1{#1\par}%
1581     \let\city\@ACM@addtoaddress
1582     \let\state\@ACM@addtoaddress
1583     \def\postcode#1{\unskip\space#1}%
1584     \let\country\@ACM@addtoaddress
1585 \fi

```

\@mkauthors Typesetting authors

```

1586 \def\@mkauthors{\begingroup
1587     \hsize=\textwidth
1588     \ifcase\ACM@format@nr
1589     \relax % manuscript

```

```

1590 \mkauthors@i
1591 \or % acmsmall
1592 \mkauthors@i
1593 \or % acmlarge
1594 \mkauthors@i
1595 \or % acmtog
1596 \mkauthors@i
1597 \or % sigconf
1598 \mkauthors@iii
1599 \or % siggraph
1600 \mkauthors@iii
1601 \or % sigplan
1602 \mkauthors@iii
1603 \or % sigchi
1604 \mkauthors@iii
1605 \or % sigchi-a
1606 \mkauthors@iv
1607 \fi
1608 \endgroup
1609 }

```

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

```

1610 \def\@authorfont{\Large\sffamily}

```

\@affiliationfont Font for affiliations

```

1611 \def\@affiliationfont{\normalsize\normalfont}

```

#### Adjusting fonts for different formats

```

1612 \ifcase\ACM@format@nr
1613 \relax % manuscript
1614 \or % acmsmall
1615 \def\@authorfont{\large\sffamily}
1616 \def\@affiliationfont{\small\normalfont}
1617 \or % acmlarge
1618 \or % acmtog
1619 \def\@authorfont{\LARGE\sffamily}
1620 \def\@affiliationfont{\large}
1621 \or % sigconf
1622 \def\@authorfont{\LARGE}
1623 \def\@affiliationfont{\large}
1624 \or % siggraph
1625 \def\@authorfont{\normalsize\normalfont}
1626 \def\@affiliationfont{\normalsize\normalfont}
1627 \or % sigplan
1628 \def\@authorfont{\Large\normalfont}
1629 \def\@affiliationfont{\normalsize\normalfont}
1630 \or % sigchi
1631 \def\@authorfont{\bfseries}
1632 \def\@affiliationfont{\mdseries}

```

```

1633 \or % sigchi-a
1634 \def\@authorfont{\bfseries}
1635 \def\@affiliationfont{\mdseries}
1636 \fi

```

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

```

1637 \def\@typeset@author@line{%
1638 \andify\@currentauthors\par\noindent
1639 \@currentauthors\def\@currentauthors{}%
1640 \ifx\@currentaffiliations\@empty\else
1641 \andify\@currentaffiliations
1642 \unskip, {\@currentaffiliations}\par
1643 \fi
1644 \def\@currentaffiliations{}}

```

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

```

1645 \def\@mkauthors@i{%
1646 \def\@currentauthors{}%
1647 \def\@currentaffiliations{}%
1648 \global\let\and\@typeset@author@line
1649 \def\@author##1{%
1650 \ifx\@currentauthors\@empty
1651 \gdef\@currentauthors{\@authorfont\MakeUppercase{##1}}%
1652 \else
1653 \g@addto@macro{\@currentauthors}{\and\MakeUppercase{##1}}%
1654 \fi
1655 \gdef\and{}}%
1656 \def\email##1##2{%
1657 \def\affiliation##1##2{%
1658 \def\@tempa{##2}\ifx\@tempa\@empty\else
1659 \ifx\@currentaffiliations\@empty
1660 \gdef\@currentaffiliations{\@affiliationfont##2}%
1661 \else
1662 \g@addto@macro{\@currentaffiliations}{\and##2}%
1663 \fi
1664 \fi
1665 \global\let\and\@typeset@author@line}%
1666 \global\setbox\mktitle@bx=\vbox{\noindent\box\mktitle@bx\par\medskip
1667 \noindent\addresses\@typeset@author@line
1668 \par\medskip}%
1669 }

```

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

\author@bx The box to put individual author to

```

1670 \newbox\author@bx

```

`\author@bx@wd` The width of the author box  
1671 `\newdimen\author@bx@wd`

`\author@bx@sep` The separation between the author boxes  
1672 `\newskip\author@bx@sep`  
1673 `\author@bx@sep=1pc\relax`

`\@typeset@author@bx` Typesetting the box with authors. Note that in SIGCHI-A the box is not centered.  
1674 `\def\@typeset@author@bx{\bgroup\hsize=\author@bx@wd\def\and{\par}%`  
1675 `\global\setbox\author@bx=\vtop{\if@ACM@sigchiamode\else\centering\fi`  
1676 `\@authorfont\@currentauthors\par\@affiliationfont`  
1677 `\@currentaffiliation}\egroup`  
1678 `\box\author@bx\hspace{\author@bx@sep}%`  
1679 `\gdef\@currentauthors{}}%`  
1680 `\gdef\@currentaffiliation{}}%`

`\@mkauthors@iii` The sigconf version. Here we use centered design with each author in a separate box.  
1681 `\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.  
1682 `\author@bx@wd=\textwidth\relax`  
1683 `\advance\author@bx@wd by -\author@bx@sep\relax`  
1684 `\ifcase\num@authorgroups`  
1685 `\relax % 0?`  
1686 `\or % 1=one author per row`  
1687 `\or % 2=two authors per row`  
1688 `\divide\author@bx@wd by \num@authorgroups\relax`  
1689 `\or % 3=three authors per row`  
1690 `\divide\author@bx@wd by \num@authorgroups\relax`  
1691 `\or % 4=two authors per row (!)`  
1692 `\divide\author@bx@wd by 2\relax`  
1693 `\else % three authors per row`  
1694 `\divide\author@bx@wd by 3\relax`  
1695 `\fi`  
1696 `\advance\author@bx@wd by -\author@bx@sep\relax`  
Now, parsing of `\addresses`:  
1697 `\gdef\@currentauthors{}}%`  
1698 `\gdef\@currentaffiliation{}}%`  
1699 `\def\@author##1{\ifx\@currentauthors\@empty`  
1700 `\gdef\@currentauthors{\par##1}%`  
1701 `\else`  
1702 `\g@addto@macro\@currentauthors{\par##1}%`  
1703 `\fi`  
1704 `\gdef\and{}}%`  
1705 `\def\@email##1##2{\ifx\@currentaffiliation\@empty`  
1706 `\gdef\@currentaffiliation{\nolinkurl{##2}}%`



```

1707 \else
1708   \g@addto@macro\@currentaffiliation{\par\nolinkurl{##2}}%
1709 \fi}%
1710 \def\affiliation##1##2{\ifx\@currentaffiliation\@empty
1711   \gdef\@currentaffiliation{##2}%
1712 \else
1713   \g@addto@macro\@currentaffiliation{\par##2}%
1714 \fi
1715 \global\let\and\@typeset@author@bx
1716 }%

```

Actual typesetting is done by \and macro:

```

1717 \hsize=\textwidth
1718 \global\setbox\mktitle@bx=\vbox{\noindent
1719   \box\mktitle@bx\par\medskip\leavevmode
1720   \lineskip=1pc\relax\centering\hspace*{-1em}%
1721   \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.

```

1722 \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.

```

1723   \author@bx@wd=\columnwidth\relax
1724   \advance\author@bx@wd by -\author@bx@sep\relax
1725   \ifcase\num@authorgroups
1726   \relax % 0?
1727   \or % 1=one author per row
1728   \else % 2=two authors per row
1729     \divide\author@bx@wd by 2\relax
1730   \fi
1731   \advance\author@bx@wd by -\author@bx@sep\relax

```

Now, parsing of \addresses:

```

1732   \gdef\@currentauthors{}%
1733   \gdef\@currentaffiliation{}%
1734   \def\@author##1{\ifx\@currentauthors\@empty
1735     \gdef\@currentauthors{\par##1}%
1736   \else
1737     \g@addto@macro\@currentauthors{\par##1}%
1738   \fi
1739   \gdef\and{}}%
1740   \def\email##1##2{\ifx\@currentaffiliation\@empty
1741     \gdef\@currentaffiliation{\nolinkurl{##2}}%
1742   \else
1743     \g@addto@macro\@currentaffiliation{\par\nolinkurl{##2}}%
1744   \fi}%

```

```

1745 \def\affiliation##1##2{\ifx\@currentaffiliation\@empty
1746 \gdef\@currentaffiliation{##2}%
1747 \else
1748 \g@addto@macro\@currentaffiliation{\par##2}%
1749 \fi
1750 \global\let\and\@typeset@author@bx}%
1751 %
Actual typesetting is done by \and macro
1752 \bgroup\hsize=\columnwidth
1753 \par\raggedright\leftskip=\z@
1754 \lineskip=1pc\noindent
1755 \addresses\let\and\@typeset@author@bx\and\par\bigskip\egroup}

\@authornotemark Adding footnote mark to authors
1756 \def\@authornotemark{\g@addto@macro\@currentauthors{\footnotemark}}

\@mkteasers Typesetting teasers
1757 \def\@mkteasers{%
1758 \ifx\@teaserfigures\@empty\else
1759 \def\@teaser##1{\par\bigskip\bgroup
1760 \captionsetup{type=figure}##1\egroup\par}
1761 \global\setbox\mktitle@bx=\vbox{\noindent\box\mktitle@bx\par
1762 \noindent\@teaserfigures\par\medskip}%
1763 \fi}

\@setaddresses This is an amsart macro, which we do not need.
1764 \def\@setaddresses{}

\@mkabstract Typesetting abstract
1765 \def\@mkabstract{\bgroup
1766 \ifx\@abstract\@empty\else
1767 {\phantomsection\addcontentsline{toc}{section}{Abstract}%
1768 \if@ACM@journal
1769 \small\noindent
1770 \else
1771 \section*{Abstract}%
1772 \fi
1773 \ignorespaces\@abstract\par}%
1774 \fi\egroup}

\@mkbibcitation Print bibcitation format
1775 \def\@mkbibcitation{\bgroup
1776 \def\footnotemark{}%
1777 \par\medskip\small\noindent{\bfseries ACM Reference format:}\par\nobreak
1778 \noindent\authors. \@acmYear. \@title.
1779 \if@ACM@journal
1780 \textit{\@journalNameShort}
1781 \@acmVolume, \@acmNumber, Article~\@acmArticle\ (\@acmPubDate),

```

```

1782 \ref{TotPages}~pages.
1783 \else
1784   In \textit{Proceedings of \acmConference@name, \acmConference@venue,
1785     \acmConference@date
1786     \ifx\acmConference@name\acmConference@shortname\else
1787       \ (\acmConference@shortname)\fi
1788     ,} \ref{TotPages}~pages.
1789 \fi\par
1790 \noindent DOI: \nolinkurl{\@acmDOI}
1791 \par\egroup}

```

\@printendtopmatter End the top matter

```

1792 \def\@printendtopmatter{\par\medskip
1793   \ifcase\ACM@format@nr
1794   \relax % manuscript
1795   \noindent\hrulefill\par\medskip
1796   \or % acmsmall
1797   \noindent\hrulefill\par\medskip
1798   \or % acmlarge
1799   \noindent\hrulefill\par\medskip
1800   \or % acmtog
1801   \par\bigskip
1802   \or % sigconf
1803   \par\bigskip
1804   \or % siggraph
1805   \par\bigskip
1806   \or % sigplan
1807   \par\bigskip
1808   \or % sigchi
1809   \par\bigskip
1810   \or % sigchi-a
1811   \fi
1812 }

```

\@setthanks We redefine \@setthanks using \long

```

1813 \def\@setthanks{\long\def\thanks##1{\par##1\@addpunct.}\thankses}

```

### 3.13 Headers and Footers

We use fancyhdr for our headers and footers:

```

1814 \RequirePackage{fancyhdr}

```

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

```

1815 \if@ACM@review
1816   \newsavebox{\ACM@linecount@bx}
1817   \savebox{\ACM@linecount@bx}[4em][t]{\parbox[t]{4em}{%
1818     \newlength\ACM@linecount@bxht\setlength{\ACM@linecount@bxht}{-\baselineskip}
1819     \@tempcnta\@ne\relax
1820     \loop{\color{ACMRed}\scriptsize\the\@tempcnta}\@tempcnta\@ne\relax}

```

```

1821     \advance\@tempcnta by \@ne
1822     \addtolength{\ACM@linecount@bxht}{\baselineskip}
1823     \ifdim\ACM@linecount@bxht<\textheight\repeat}}
1824 \fi

\ACM@linecount How to display the box
1825 \def\ACM@linecount{%
1826   \if@ACM@review
1827   \begin{picture}(0,0)%
1828     \put(-26,-22){\usebox{\ACM@linecount@bx}}}%
1829   \end{picture}%
1830   \fi}

\@shortauthors Even if the author redefined \shortauthors, we do not print them in the anonymous
mode in the headers:
1831 \def\@shortauthors{\if@ACM@anonymous Anon.\else\shortauthors\fi}

\@headfootfont The font to typeset header and footer text.
1832 \def\@headfootfont{%
1833   \ifcase\ACM@format@nr
1834   \relax % manuscript
1835   \sffamily
1836   \or % acmsmall
1837   \sffamily
1838   \or % acmlarge
1839   \sffamily
1840   \or % acmtog
1841   \sffamily
1842   \or % sigconf
1843   \sffamily
1844   \or % siggraph
1845   \sffamily
1846   \or % sigplan
1847   \sffamily
1848   \or % sigchi
1849   \sffamily
1850   \or % sigchi-a
1851   \sffamily
1852   \fi}

standardpagestyle The pagestyle for all pages but the first one
1853 \fancypagestyle{standardpagestyle}{%
1854   \fancyhf{}%
1855   \renewcommand{\headrulewidth}{\z@}%
1856   \renewcommand{\footrulewidth}{\z@}%
1857   \ifcase\ACM@format@nr
1858   \relax % manuscript
1859   \fancyhead[LE]{\ACM@linecount\if@ACM@printfolios\thepage\fi}%
1860   \fancyhead[RO]{\if@ACM@printfolios\thepage\fi}%

```

```

1861 \fancyhead[RE]{\@shortauthors}%
1862 \fancyhead[LO]{\ACM@linecount\shorttitle}%
1863 \fancyfoot[RO,LE]{\footnotesize Manuscript submitted to ACM}%
1864 \or % acmsmall
1865 \fancyhead[LE]{\ACM@linecount\@headfootfont\@acmArticle\if@ACM@printfolios:\thepage\fi}%
1866 \fancyhead[RO]{\@headfootfont\@acmArticle\if@ACM@printfolios:\thepage\fi}%
1867 \fancyhead[RE]{\@headfootfont\@shortauthors}%
1868 \fancyhead[LO]{\ACM@linecount\@headfootfont\shorttitle}%
1869 \fancyfoot[RO,LE]{\footnotesize \@journalName, Vol. \@acmVolume, No.
1870 \@acmNumber, Article \@acmArticle. Publication date: \@acmPubDate.}%
1871 \or % acmlarge
1872 \fancyhead[LE]{\ACM@linecount\@headfootfont
1873 \@acmArticle\if@ACM@printfolios:\thepage\fi\quad\textbullet\quad\@shortauthors}%
1874 \fancyhead[LO]{\ACM@linecount}%
1875 \fancyhead[RO]{\@headfootfont
1876 \shorttitle\quad\textbullet\quad\@acmArticle\if@ACM@printfolios:\thepage\fi}%
1877 \fancyfoot[RO,LE]{\footnotesize \@journalName, Vol. \@acmVolume, No.
1878 \@acmNumber, Article \@acmArticle. Publication date: \@acmPubDate.}%
1879 \or % acmtog
1880 \fancyhead[LE]{\ACM@linecount\@headfootfont
1881 \@acmArticle\if@ACM@printfolios:\thepage\fi\quad\textbullet\quad\@shortauthors}%
1882 \fancyhead[LO]{\ACM@linecount}%
1883 \fancyhead[RO]{\@headfootfont
1884 \shorttitle\quad\textbullet\quad\@acmArticle\if@ACM@printfolios:\thepage\fi}%
1885 \fancyfoot[RO,LE]{\footnotesize \@journalName, Vol. \@acmVolume, No.
1886 \@acmNumber, Article \@acmArticle. Publication date: \@acmPubDate.}%
1887 \else % Proceedings
1888 \fancyfoot[C]{\if@ACM@printfolios\footnotesize\thepage\fi}%
1889 \fancyhead[LO]{\ACM@linecount\@headfootfont\shorttitle}%
1890 \fancyhead[RE]{\@headfootfont\@shortauthors}%
1891 \fancyhead[LE]{\ACM@linecount\@headfootfont\acmConference@shortname,
1892 \acmConference@date, \acmConference@venue}%
1893 \fancyhead[RO]{\@headfootfont\acmConference@shortname,
1894 \acmConference@date, \acmConference@venue}%
1895 \fi
1896 \if@ACM@sigchiamode
1897 \fancyheadoffset[L]{\dimexpr(\marginparsep+\marginparwidth)}%
1898 \fi
1899 }
1900 \pagestyle{standardpagestyle}

```

```

\@folio@wd Folio blob width, height, offsets and max number
\@folio@ht 1901 \newdimen\@folio@wd
\@folio@voffset 1902 \@folio@wd=\z@
\@folio@max 1903 \newdimen\@folio@ht
1904 \@folio@ht=\z@
1905 \newdimen\@folio@voffset
1906 \@folio@voffset=\z@
1907 \def\@folio@max{1}
1908 \ifcase\ACM@format@nr

```

```

1909 \relax % manuscript
1910 \or % acmsmall
1911   \@folio@wd=45.75pt\relax
1912   \@folio@ht=1.25in\relax
1913   \@folio@voffset=.2in\relax
1914   \def\@folio@max{8}
1915 \or % acmlarge
1916   \@folio@wd=43.25pt\relax
1917   \@folio@ht=79pt\relax
1918   \@folio@voffset=.55in\relax
1919   \def\@folio@max{10}
1920 \fi

```

\@folioblob The macro to typeset the folio blob.

```

1921 \def\@folioblob{\@tempcnta=\@acmArticleSeq\relax
First, we calculate \@acmArticleSeq modulo \@folio@max
1922   \loop
1923     \ifnum\@tempcnta>\@folio@max\relax
1924     \advance\@tempcnta by - \@folio@max
1925   \repeat
1926   \advance\@tempcnta by -1\relax
1927   \@tempdima=\@folio@ht\relax
1928   \multiply\@tempdima by \the\@tempcnta\relax
1929   \advance\@tempdima by -\@folio@voffset\relax
1930   \begin{picture}(0,0)
1931     \makebox[\z@]{\raisebox{-\@tempdima}{%
1932       \rlap{%
1933         \raisebox{-0.45\@folio@ht}{\z@}\z@}{%
1934           \rule{\@folio@wd}{\@folio@ht}}}%
1935       \parbox{\@folio@wd}{%
1936         \centering
1937         \textcolor{white}{\LARGE\bfseries\sffamily\@acmArticle}}}}
1938   \end{picture}}
1939

```

firstpagestyle The pagestyle for the first page only.

```

1940 \fancypagestyle{firstpagestyle}{%
1941   \fancyhf{}%
1942   \renewcommand{\headrulewidth}{\z@}%
1943   \renewcommand{\footrulewidth}{\z@}%
1944   \ifcase\ACM@format@nr
1945   \relax % manuscript
1946     \fancyhead[L]{\ACM@linecount}%
1947     \fancyfoot[R0,LE]{\if@ACM@printfolios\small\thepage\fi}%
1948     \fancyfoot[RE,LO]{\footnotesize Manuscript submitted to ACM}%
1949   \or % acmsmall
1950     \fancyfoot[R0,LE]{\footnotesize \@journalName, Vol. \@acmVolume, No.
1951       \@acmNumber, Article \@acmArticle. Publication date:
1952       \@acmPubDate.}%

```

```

1953 \fancyhead[LE]{\ACM@linecount\@folioblob}%
1954 \fancyhead[LO]{\ACM@linecount}%
1955 \fancyhead[RO]{\@folioblob}%
1956 \fancyheadoffset[RO,LE]{0.6\@folio@wd}%
1957 \or % acmlarge
1958 \fancyfoot[RO,LE]{\footnotesize \@journalName, Vol. \@acmVolume, No.
1959 \@acmNumber, Article \@acmArticle. Publication date:
1960 \@acmPubDate.}%
1961 \fancyhead[RO]{\@folioblob}%
1962 \fancyhead[LE]{\ACM@linecount\@folioblob}%
1963 \fancyhead[LO]{\ACM@linecount}%
1964 \fancyheadoffset[RO,LE]{1.4\@folio@wd}%
1965 \or % acmtog
1966 \fancyfoot[RO,LE]{\footnotesize \@journalName, Vol. \@acmVolume, No.
1967 \@acmNumber, Article \@acmArticle. Publication date:
1968 \@acmPubDate.}%
1969 \fancyhead[L]{\ACM@linecount}%
1970 \else % Conference proceedings
1971 \fancyhead[L]{\ACM@linecount}%
1972 \fancyfoot[C]{\if@ACM@printfolios\footnotesize\thepage\fi}%
1973 \fi
1974 }

```

### 3.14 Sectioning

Sectioning is different for different levels

```

1975 \renewcommand\section{\@startsection{section}{1}{\z@}%
1976 {-0.75\baselineskip \@plus -2\p@ \@minus -.2\p@}%
1977 {0.25\baselineskip}%
1978 {\@secfont}}
1979 \renewcommand\subsection{\@startsection{subsection}{2}{\z@}%
1980 {-0.75\baselineskip \@plus -2\p@ \@minus -.2\p@}%
1981 {0.25\baselineskip}%
1982 {\@subsecfont}}
1983 \renewcommand\subsubsection{\@startsection{subsubsection}{3}{10pt}%
1984 {-0.5\baselineskip \@plus -2\p@ \@minus -.2\p@}%
1985 {-3.5\p@}%
1986 {\@subsubsecfont\@adddotafter}}
1987 \renewcommand\paragraph{\@startsection{paragraph}{4}{\parindent}%
1988 {-0.5\baselineskip \@plus -2\p@ \@minus -.2\p@}%
1989 {-3.5\p@}%
1990 {\@parfont\@adddotafter}}
1991 \renewcommand\part{\@startsection{part}{9}{\z@}%
1992 {-10\p@ \@plus -4\p@ \@minus -2\p@}%
1993 {4\p@}%
1994 {\@parfont}}

```

\section@raggedright Special version of \raggedright compatible with \MakeUppercase

```

1995 \def\section@raggedright{\@rightskip\@flushglue

```

```

1996 \rightskip\@rightskip
1997 \leftskip\z@skip
1998 \parindent\z@}

\@secfont Fonts for sections etc. are different for different formats.
\@subsecfont 1999 \def\@secfont{\sffamily\bfseries\section@raggedright\MakeUppercase}
\@subsubsecfont 2000 \def\@subsubsecfont{\sffamily\bfseries\section@raggedright}
\@parfont 2001 \def\@subsubsecfont{\sffamily\itshape}
2002 \def\@parfont{\itshape}
2003 \setcounter{secnumdepth}{3}
2004 \ifcase\ACM@format@nr
2005 \relax % manuscript
2006 \or % acmsmall
2007 \or % acmlarge
2008 \def\@secfont{\sffamily\large\section@raggedright\MakeUppercase}
2009 \def\@subsecfont{\sffamily\large\section@raggedright}
2010 \or % acmtog
2011 \def\@secfont{\sffamily\large\section@raggedright\MakeUppercase}
2012 \def\@subsecfont{\sffamily\large\section@raggedright}
2013 \or % sigconf
2014 \def\@secfont{\bfseries\Large\section@raggedright\MakeUppercase}
2015 \def\@subsecfont{\bfseries\Large\section@raggedright}
2016 \or % siggraph
2017 \def\@secfont{\bfseries\sffamily\Large\section@raggedright\MakeUppercase}
2018 \def\@subsecfont{\bfseries\sffamily\Large\section@raggedright}
2019 \or % sigplan
2020 \def\@secfont{\bfseries\Large\section@raggedright}
2021 \def\@subsecfont{\bfseries\section@raggedright}
2022 \renewcommand\subsubsection{\@startsection{subsubsection}{3}{\z@}%
2023 {-0.75\baselineskip \@plus -2\p@ \@minus -.2\p@}%
2024 {0.25\baselineskip}%
2025 {\@subsubsecfont}}
2026 \def\@subsubsecfont{\bfseries\section@raggedright}
2027 \renewcommand\paragraph{\@startsection{paragraph}{4}{\z@}%
2028 {-0.5\baselineskip \@plus -2\p@ \@minus -.2\p@}%
2029 {-3.5\p@}%
2030 {\@parfont\@addspaceafter}}
2031 \def\@parfont{\bfseries\itshape}
2032 \renewcommand\subparagraph{\@startsection{subparagraph}{5}{\z@}%
2033 {-0.5\baselineskip \@plus -2\p@ \@minus -.2\p@}%
2034 {-3.5\p@}%
2035 {\@subparfont\@addspaceafter}}
2036 \def\@subparfont{\itshape}
2037 \or % sigchi
2038 \setcounter{secnumdepth}{1}
2039 \def\@secfont{\bfseries\sffamily\section@raggedright\MakeUppercase}
2040 \def\@subsecfont{\bfseries\sffamily\section@raggedright}
2041 \or % sigchi-a
2042 \setcounter{secnumdepth}{0}
2043 \def\@secfont{\bfseries\sffamily\section@raggedright\MakeUppercase}

```



```

2044 \def\@subsecfont{\bfseries\sffamily\section@raggedright}
2045 \fi

```

`\@adddotafter` Add punctuation after the command

```

2046 \def\@adddotafter#1{#1\@addpunct{.}}

```

`\@addspaceafter` Add space after the command

```

2047 \def\@addspaceafter#1{#1\@addpunct{\enspace}}

```

### 3.15 TOC Lists

`\@dotsep` Related to the `\tableofcontents` are all the horizontal fillers. Base  $\TeX$  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.

```

2048 \providecommand*\@dotsep{4.5}

```

### 3.16 Theorems

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

```

2049 \def\@acmplainbodyfont{\itshape}

```

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

```

2050 \def\@acmplainindent{\parindent}

```

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

```

2051 \def\@acmplainheadfont{\scshape}

```

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

```

2052 \def\@acmplainnotefont{\@empty}

```

Customization of `acmplain` theorem style:

```

2053 \ifcase\ACM@format@nr
2054 \relax % manuscript
2055 \or % acmsmall
2056 \or % acmlarge
2057 \or % acmtog
2058 \or % sigconf
2059 \or % siggraph
2060 \or % sigplan
2061 \def\@acmplainbodyfont{\itshape}
2062 \def\@acmplainindent{\z@}
2063 \def\@acmplainheadfont{\bfseries}
2064 \def\@acmplainnotefont{\normalfont}
2065 \or % sigchi
2066 \or % sigchi-a
2067 \fi

```

acmplain The acmplain theorem style

```

2068 \newtheoremstyle{acmplain}%
2069   {.5\baselineskip\@plus.2\baselineskip
2070     \@minus.2\baselineskip}% space above
2071   {.5\baselineskip\@plus.2\baselineskip
2072     \@minus.2\baselineskip}% space below
2073   {\@acmplainbodyfont}% body font
2074   {\@acmplainindent}% indent amount
2075   {\@acmplainheadfont}% head font
2076   {.}% punctuation after head
2077   {.5em}% spacing after head
2078   {\thmname{#1}\thmnumber{ #2}\thmnote{ {\@acmplainnotefont{#3}}}}% head spec

```

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

```

2079 \def\@acmdefinitionbodyfont{\normalfont}

```

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

```

2080 \def\@acmdefinitionindent{\parindent}

```

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

```

2081 \def\@acmdefinitionheadfont{\itshape}

```

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

```

2082 \def\@acmdefinitionnotefont{\@empty}

```

Customization of acmdefinition theorem style:

```

2083 \ifcase\ACM@format@nr
2084 \relax % manuscript
2085 \or % acmsmall
2086 \or % acmlarge
2087 \or % acmtog
2088 \or % sigconf
2089 \or % siggraph
2090 \or % sigplan
2091   \def\@acmdefinitionbodyfont{\normalfont}
2092   \def\@acmdefinitionindent{\z@}
2093   \def\@acmdefinitionheadfont{\bfseries}
2094   \def\@acmdefinitionnotefont{\normalfont}
2095 \or % sigchi
2096 \or % sigchi-a
2097 \fi

```

acmdefinition The acmdefinition theorem style

```

2098 \newtheoremstyle{acmdefinition}%
2099   {.5\baselineskip\@plus.2\baselineskip
2100     \@minus.2\baselineskip}% space above
2101   {.5\baselineskip\@plus.2\baselineskip
2102     \@minus.2\baselineskip}% space below
2103   {\@acmdefinitionbodyfont}% body font

```

```

2104 {\acmdefinitionindent}% indent amount
2105 {\acmdefinitionheadfont}% head font
2106 {.}% punctuation after head
2107 {.5em}% spacing after head
2108 {\thmname{#1}\thmnumber{ #2}\thmnote{ {\acmdefinitionnotefont(#3)}}}% head spec

```

The definitions for theorems:

```

2109 \theoremstyle{acmplain}
2110 \newtheorem{theorem}{Theorem}[section]
2111 \newtheorem{conjecture}[theorem]{Conjecture}
2112 \newtheorem{proposition}[theorem]{Proposition}
2113 \newtheorem{lemma}[theorem]{Lemma}
2114 \newtheorem{corollary}[theorem]{Corollary}
2115 \theoremstyle{acmdefinition}
2116 \newtheorem{example}[theorem]{Example}
2117 \newtheorem{definition}[theorem]{Definition}
2118 \theoremstyle{acmplain}

```

\@proofnamefont The font to typeset the proof name.

```

2119 \def\@proofnamefont{\scshape}

```

\@proofindent Whether or not to indent proofs.

```

2120 \def\@proofindent{\indent}

```

Customization of proof environment.

```

2121 \ifcase\ACM@format@nr
2122 \relax % manuscript
2123 \or % acmsmall
2124 \or % acmlarge
2125 \or % acmtog
2126 \or % sigconf
2127 \or % siggraph
2128 \or % sigplan
2129 \def\@proofnamefont{\itshape}
2130 \def\@proofindent{\noindent}
2131 \or % sigchi
2132 \or % sigchi-a
2133 \fi

```

proof We want some customization of proof environment.

```

2134 \renewenvironment{proof}[1][\proofname]{\par
2135 \pushQED{\qed}%
2136 \normalfont \topsep6\p@\@plus6\p@\relax
2137 \trivlist
2138 \item[\@proofindent\hskip\labelsep
2139 {\@proofnamefont #1\@addpunct{.}}]\ignorespaces
2140 }{%
2141 \popQED\endtrivlist\@endpfalse
2142 }

```

### 3.17 Acknowledgments

`\acks` This is a comment-like structure

```
2143 \specialcomment{acks}{%
2144   \begingroup
2145   \section*{Acknowledgments}
2146   \phantomsection\addcontentsline{toc}{section}{Acknowledgments}
2147 }{%
2148   \endgroup
2149 }
```

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

```
2150 \def\grantsponsor#1#2#3{#2}
```

`\grantnum`

```
2151 \newcommand\grantnum[3][{}]{#3%
2152   \def\@tempa{#1}\ifx\@tempa\empty\else\space(\url{#1})\fi}
```

### 3.18 Conditional typesetting

We use the `comment` package for conditional typesetting:

```
2153 \if@ACM@screen
2154   \includecomment{screenonly}
2155   \excludecomment{printonly}
2156 \else
2157   \excludecomment{screenonly}
2158   \includecomment{printonly}
2159 \fi
2160 \if@ACM@anonymous
2161   \excludecomment{anonsuppress}
2162   \excludecomment{acks}
2163 \else
2164   \includecomment{anonsuppress}
2165 \fi
```

### 3.19 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/hypertext/bibstyles/>).

```
2166 \newcommand\showeprint[2][arxiv]{%
2167   \def\@tempa{#1}%
2168   \ifx\@tempa\empty\def\@tempa{arxiv}\fi
2169   \def\@tempb{arxiv}%
2170   \ifx\@tempa\@tempb
2171     arXiv:\href{http://arxiv.org/abs/#2}{#2}\else arXiv:#2%
2172   \fi}
```

### **3.20 End of Class**

2173 \normalsize\normalfont\frenchspacing

2174 \end{class}

## References

## Change History

v1.00	General: First released version . . . . .	23	v1.05	General: Added processing doi numbers for acmsiggraph and doi numbers for sigproc.bib . . . . .	23
v1.01	General: Changed hyperref colors in screen mode (closes <a href="https://github.com/borisveytsman/acmart/issues/1">https://github.com/borisveytsman/acmart/issues/1</a> ) . . . . .	23		Patched \setcitestyle command; closes <a href="https://github.com/borisveytsman/acmart/issues/19">https://github.com/borisveytsman/acmart/issues/19</a> . . . . .	23
	Defined ACM colors . . . . .	23	v1.06	\@ACM@badge@skip: Added macro . .	47
	Explicitly put draft option (closes <a href="https://github.com/borisveytsman/acmart/issues/4">https://github.com/borisveytsman/acmart/issues/4</a> ) . . . . .	25		\@ACM@badge@width: Added macro .	47
	Set headheight to 1pc for all formats (closes <a href="https://github.com/borisveytsman/acmart/issues/5">https://github.com/borisveytsman/acmart/issues/5</a> ) . . . . .	23		\@ACM@title@width: Added macro .	47
v1.02	General: Added TOPS and TSC (closes <a href="https://github.com/borisveytsman/acmart/issues/12">https://github.com/borisveytsman/acmart/issues/12</a> ) . . . . .	23		\@mktitle@i: Added processing badges . . . . .	59
	Documentation changes (closes <a href="https://github.com/borisveytsman/acmart/issues/13">https://github.com/borisveytsman/acmart/issues/13</a> ) . . . . .	23		Made generic . . . . .	59
v1.03	\@formatdoi: Added macro . . . . .	51		\@mktitle@ii: Now this macro is obsolete . . . . .	60
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