

The `amsldoc` and `amsdtx` document classes

American Mathematical Society

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1 Introduction

This file is the source for two documentclasses, `amsldoc` (used for the $\mathcal{A}\mathcal{M}\mathcal{S}$ - $\mathcal{L}\mathcal{A}\mathcal{T}\mathcal{E}\mathcal{X}$ user's guide) and `amsdtx` (used for printing AMS `.dtx` files). The generic `book` class is used as a base, but the `amsdtx` class is modified to serve as an article-type class. This affects the form of documentation files mainly in the use of `\maketitle` and `\chapter`.

Standard starting pieces. (Note: the reason each `\ProvidesClass` command is placed on a line by itself, with separate begin and end guards for docstripping, is to make automatic update of file date and version slightly easier and more robust.)

```
1 \NeedsTeXFormat{LaTeX2e}% LaTeX 2.09 can't be used (nor non-LaTeX)
2 [1995/06/01]% LaTeX date must be June 1995 or later
3 \*amsldoc
4 \ProvidesClass{amsldoc}[2009/08/19 v2.07]
5 \amsldoc
6 \*amsdtx
7 \ProvidesClass{amsdtx}[2009/08/19 v2.07]
8 \amsdtx
```

2 Implementation

Start with the generic `book` class as a base.

```
9 \DeclareOption*{\PassOptionsToClass{\CurrentOption}{book}}
```

Table 1. Features of the `amsl doc` and `amsdtx` classes

Command Name	Purpose
<code>\cn</code>	To print a user command name: <code>\cn{title}</code> ; leading backslash can be optionally included for control symbols: <code>\cn{\%}</code> . The <code>\cn</code> command works properly even in macro arguments (compare to, e.g., <code>\verb'newif'</code>). But beware of a fragile control symbol (are there any?) in a moving argument.
<code>\cs</code>	'Control sequence': to print an internal command name, not intended for the end user
<code>\env</code>	To print an environment name: <code>\env{table}</code>
<code>\pkg</code>	To print a package name: <code>\pkg{eufrak}</code>
<code>\cls</code>	To print a class name: <code>\cls{book}</code>
<code>\opt</code>	To print the name of a class or package option: <code>\opt{twocolumn}</code>
<code>\bst</code>	To print the name of a BibTeX style <code>\bst{amsalpha}</code>
<code>\fn</code>	To print a file name or font name: <code>\fn{T1enc.def}</code> , <code>\fn{cmsy10}</code>
<code>\fnt</code>	To print a font name: <code>\fn{cmsy10}</code>
<code>\cnt</code>	To print a counter name: <code>\fn{topnumber}</code>
<code>\qc</code>	To quote a single character: <code>\qc{\%}</code> ; this works properly for special characters, even in macro arguments, unlike e.g., <code>\verb'%'</code>
<code>\latex/ etc.</code>	Convenient forms of <code>\LaTeX</code> , <code>\TeX</code> , <code>\BibTeX</code> , etc. that are easier to type and have a trailing slash to eliminate the following-space problem (without needing different markup in different contexts)

```

10 \ProcessOptions
11 \LoadClass{book}

12 \IfFileExists{url.sty}{%
13   \RequirePackage{url}\relax
14   \@gobble
15 }{%
16   \@firstofone
17 }
18 {
19   \DeclareRobustCommand{\url}[1]{%
20     \def\@tempa{#1}%
21     \texttt{\urlsetup $\expandafter\strip@prefix\meaning\@tempa$}%
22   }%
23   \def\urlsetup{%
24     \check@mathfonts \textfont\@ne\the\font \textfont\z@\the\font
25     \urlfix +\urlfix=\urlfix:\urlfix-\urlfix.\urlfix\,\urlfix\;%

```

```

26     \urlbreak\&\urlbreak\/\urlbreak\?%
27   }%
28   \def\urlbreak#1{%
29     \mathcode'#1="8000
30     \begingroup \lccode'\~='#1 \lowercase{\endgroup \edef~}%
31     {\mathchar\number'#1\penalty\hyphenpenalty}%
32   }%
33   \def\urlfix#1{%
34     \mathcode'#1='#1\relax
35   }%
36 }

37 \providecommand{\qq}[1]{\textquotedblleft#1\/\textquotedblright}
38 \providecommand{\mdash}{\textendash\penalty\exhyphenpenalty}
39 \providecommand{\ndash}{\textendash\penalty\exhyphenpenalty}
40 \let\@xp\expandafter

```

3 Indexing primitives

Unlike `amstx`, `amsl` doesn't load the `doc` package, so we need to provide the following logical names. The values are consistent with `makeindex`'s default conventions.

```

41 ⟨*amsl⟩
42 \def\actualchar{@}
43 \def\quotechar{"}
44 \def\levelchar{!}
45 \def\encapchar{|}
46 \def\verbatimchar{+}

```

We also need the `\ifcodeline@index` switch.

```

47 \newif\ifcodeline@index
48 ⟨/amsl⟩

```

`\autoindex` When generating a codeline index, this encapsulates the page number in italics.

```

49 \newcommand*\autoindex[1]{%
50   \index{#1\ifcodeline@index\encapchar usage\fi}%
51 }

```

`\ntt` To avoid font substitution warnings we make the `tt` font always print in the normal weight and shape.

```

52 \newcommand{\ntt}{\normalfont\ttfamily}

```

`\indexcs` Index a control sequence without printing it. Note non-long. The `\@nobs` strips off an optional leading backslash before passing the control sequence name to `\@indexcs`. This means that `\indexcs{\cs}` and `\indexcs{cs}` produce the same index entry.

```

53 \newcommand*\indexcs[1]{%
54   \@xp\@xp\@xp\@indexcs\@xp\@nobs\string#1\@nil
55 }

```

`\@indexcs` Given `cs` as an argument, this writes something like `cs@\verb"*\cs+` to the `.idx` file (or `cs=\verb!*\cs+` if using `doc.sty`).

```
56 \def\@indexcs#1\@nil{%
57   \autoindex{#1\actualchar
58     \string\verb\quotechar*\verbatimchar
59     \xp@bothoftwo\string\ #1\@empty
60     \verbatimchar
61   }%
62 }
```

`\@bothoftwo` This has the effect of removing spaces before each of the arguments. In particular, it removes the space generated by `\string\` above.

```
63 \def\@bothoftwo#1#2{#1#2}
```

`\category@index`

```
64 \def\category@index#1#2{%
65   {\ntt#2}%
66   \@category@index{#1}{#2}%
67 }
```

`\@category@index`

```
68 \def\@category@index#1#2{%
69   \autoindex{%
70     #2\actualchar\string\texttt{#2}%
71     \ifx\@nil#1\@nil\else\space#1\fi
72   }%
73 }
```

Some functions to support `\cn` etc. For most of these commands we don't really want them to be `\long`! But in some early releases of L^AT_EX 2_ε the `*` form of `\newcommand` was not yet available.

We use the name `\bslchar` instead of `\bslash` to avoid potential conflict with the `doc` package `\bslash` command. Unlike `\bslash`, `\bslchar` survives unlimited writing/expansion because it is a chardef.

```
74 \chardef\bslchar='\ % p. 424, TeXbook
75 \newcommand{\addbslash}{\expandafter\@addbslash\string}
76 \def\@addbslash#1{\bslchar\@nobslash#1}
77 \newcommand{\nobslash}{\expandafter\@nobslash\string}
78 \def\@nobslash#1{\ifnum'#1=\bslchar\else#1\fi}
```

`\@boxorbreak` Start up for a `\cs` or `\cn` command, adds an `\hbox` if in math, or an allowbreak penalty if the preceding item is not a space. (In case two such commands are used side-by-side.)

```
79 \def\@boxorbreak{%
80   \leavevmode
81   \ifmmode\hbox\else\ifdim\lastskip=\z@\penalty9999 \fi\fi
82 }
```

Control sequence. The function `\addbslash` makes this command also usable for some special control sequences like `\% \}` `\{`: instead of writing `\cs{}` which doesn't work, you can write `\cs{}`.

```
83 \DeclareRobustCommand{\cs}[1]{%
84   \@boxorbreak{%
85     \ntt
86     \addbslash#1\@empty
87     \@xp\@xp\@xp\@indexcs\@xp\@nobs slash\string#1\@nil
88   }%
89 }
```

Allow distinguishing non-private ‘command names’ that will be visible to the user from internal (mostly private) ‘control sequences’.

```
90 \let\cn\cs
```

`\embrace`

```
91 \DeclareTextSymbol{\lbracechar}{OT1}{123}
92 \DeclareTextSymbolDefault{\lbracechar}{OT1}
93 \DeclareTextSymbol{\rbracechar}{OT1}{125}
94 \DeclareTextSymbolDefault{\rbracechar}{OT1}
95
96 \providecommand{\embrace}[1]{%
97   \begingroup \ntt\lbracechar#1\rbracechar\endgroup}
```

One mandatory argument: `cnm`; two: `cnmm`; one optional and one mandatory: `cnom`; throwing in a star: `cnsm`; and so on.

```
98 \providecommand{\cnbreak}{\penalty999\hskip0pt\relax}
99 \providecommand{\cnm}[2]{\cn{#1}\cnbreak\embrace{#2}}
100 \providecommand{\cnmm}[3]{\cn{#1}\cnbreak\embrace{#2}\cnbreak\embrace{#3}}
101 \providecommand{\cnom}[1]{\cn{#1}\cnbreak\ommitude}
102 \providecommand{\ommitude}[2][\ntt{#1}]{\cnbreak\embrace{#2}}
103 \providecommand{\cnsm}[4]{%
104   \cn{#1}\cnbreak\embrace{#2}\cnbreak *\embrace{#4}}
```

The following items should not normally appear in math mode so they don't need to call `\@boxorbreak`.

LaTeX documentclass name.

```
105 \DeclareRobustCommand{\cls}{\category@index{class}}
```

LaTeX package name.

```
106 \DeclareRobustCommand{\pkg}{\category@index{package}}
```

LaTeX option name.

```
107 \DeclareRobustCommand{\opt}{\category@index{option}}
```

Environment name.

```
108 <amstex>\DeclareRobustCommand{\env}[1]{\ntt#1}\SpecialEnvIndex{#1}}
```

```
109 <amstex>\DeclareRobustCommand{\env}{\category@index{environment}}
```

File name.

```
110 \DeclareRobustCommand{\fn}{\category@index{}}
```

Bib \TeX style.

```
111 \DeclareRobustCommand{\bst}{\category@index{\string\BibTeX} style}}
112 \DeclareRobustCommand{\cnt}{\category@index{counter}}
113 \DeclareRobustCommand{\fnt}{\category@index{font}}
```

With long command names or file names we sometimes prefer to allow hyphenation in the tt font (in combination with suitable `\hyphenation` statements for individual documents). To make this work we must turn off the feature of \LaTeX that disables the `hyphenchar` of the tt fonts.

The method shown here depends on the assumption that OT1 encoding will be used for the tt fonts. An encoding-independent method would be more awkward: You'd have to explicitly load the relevant fonts, let's say by using `\AtBeginDocument`, and undo the `hyphenchar` change individually for each font.

Instead we force loading, or possibly reloading (depending on the preload options used locally for creating the \LaTeX format file), of the OT1/cmtt fd file, and then clear the macro `\OT1+cmtt` which contains code to execute whenever a font of this family is first loaded. The default value is to turn off the `hyphenchar`, and that's what we don't want.

This method is not especially palatable but other methods that don't involve loading the fd file are significantly less reliable.

```
114 \def\allowtthyphens{\begingroup
115   \fontencoding{OT1}\fontfamily{cmtt}%
```

Undefine the csname that `\try@load@fontshape` tests to determine whether the fd file needs loading. Then call `\try@load@fontshape`. Then we can remove the 'turn off hyphenation' code, which as it happens resides in the same csname that was tested.

```
116   \expandafter\let\csname OT1+cmtt\endcsname\relax
117   \try@load@fontshape
118   \endgroup
119   \expandafter\let\csname OT1+cmtt\endcsname\@empty
120 }
```

We allow some slop at the right margin because we have some long control sequence names and verbatim text to deal with. Also ignore underfull hboxes and vboxes unless they are really bad.

```
121 \hfuzz2pc
122 \vbadness9999 \hbadness5000
123 \def\AmS{\protect\usefont{OMS}{cmsy}{m}{n}%
124   A\kern-.1667em\lower.5ex\hbox{M}\kern-.125emS}}
125 \def\latex/{\protect\LaTeX}
126 \def\amslatex/{\protect\AmS-\protect\LaTeX}
127 \def\tex/{\protect\TeX}
128 \def\amstex/{\protect\AmS-\protect\TeX}
129 \def\bibtex/{\Bib\protect\TeX}
```

`\makeindex` command is already used for other purposes.

```
130 \def\makeindx/{MakeIndex}
```

Don't allow a break after the hyphen:

```

131 \def\xypic/{XY\mbox{-}pic}
132 \newcommand{\Textures}{\textit{Textures}}
    'Meta' macro.
133 \def<#1>{\textit{$\langle$#1/$\rangle$}}
    Reduce itemsep in lists.
134 \def\@listi{%
135   \leftmargin\leftmargini
136   \topsep 3\p@ \@plus2\p@ \@minus\p@
137   \parsep \p@ \@plus\p@ \itemsep\parsep
138 }
139 \let\@listI\@listi
140 \@listi
141 \def\@listii{%
142   \leftmargin\leftmarginii
143   \labelwidth\leftmarginii \advance\labelwidth-\labelsep
144   \topsep\p@\@plus\p@ \@minus\p@
145   \parsep\z@skip \itemsep\z@skip
146 }
147 \def\@listiii{%
148   \leftmargin\leftmarginiii
149   \labelwidth\leftmarginiii \advance\labelwidth-\labelsep
150   \topsep\z@skip \parsep\z@skip \itemsep\z@skip
151 }

```

An environment to encapsulate remarks relevant to old versions but not essential for the current version.

```

152 \newenvironment{histnote}{%
153   \trivlist\item[\hspace{\labelsep}\bfseries Historical Note:]}%
154 }{%
155   \endtrivlist
156 }

```

Turn off `\autoindex` during `\tableofcontents` or similar.

```

157 \def\@starttoc#1{\begingroup
158   \let\autoindex@gobble
159   \makeatletter
160   \@input{\jobname.#1}\if@filesw
161   \expandafter\newwrite\csname tf@#1\endcsname
162     \immediate\openout
163     \csname tf@#1\endcsname \jobname.#1\relax
164   \fi \global\@nobeatfalse \endgroup}

```

Make glossary commands a no-op for the moment. [mjd,1994/10/03] Provide a `\secref` command for section references.

```

165 <*amsl doc>
166 \newcommand{\gloss}[1]{}
167 </amsl doc>
168 \newcommand*\secref*[1]{\S\ref{#1}}

```

We can write `\qc{\%}` to quote a single character in situations where `\verb"%` would not work, mainly when text is read as a macro argument (e.g., footnotes).

```
169 \newcommand{\qc}[1]{% check for prior definition
170 \edef\qc#1{\noexpand\protect\expandafter\noexpand\csname qc \endcsname
171 \noexpand\protect#1}
```

For this function the first argument is `\protect` and just needs to be discarded. The method for removing a leading backslash is to turn off `\escapechar`; this is more forgiving of variations like `\qc{}`. If the argument is `'\'` we print a `\cmtt` visible-space character, `_`.

```
172 \@namedef{qc }#1#2{\begingroup\ntt
173 \ifx\ #2\char'\ \else\escapechar\m@ne\string#2\fi\endgroup}
```

Declare a few character names to avoid e.g., indexing difficulties.

```
174 \DeclareRobustCommand{\qcat}{\qc\@}%
175 \DeclareRobustCommand{\qcamp}{\qc\&}%
176 \DeclareRobustCommand{\qcbang}{\qc\!}%
```

`\arg` Change `\arg` to print a macro argument number:

```
177 \DeclareRobustCommand{\arg}[1]{\ntt\##1}
```

We need to emulate the `amsthm \qedsymbol` for the $\mathcal{A}\mathcal{M}\mathcal{S}$ - $\mathcal{L}\mathcal{A}\mathcal{T}\mathcal{E}\mathcal{X}$ user's guide.

```
178 \langle*amsl doc\rangle
179 \newcommand{\openbox}{\leavevmode
180 \hbox to.77778em{%
181 \hfil\vrule
182 \vbox to.675em{\hrule width.6em\vfil\hrule}%
183 \vrule\hfil}}
184 \newcommand{\qedsymbol}{\openbox}
185 \rangle/amsldoc\rangle
```

Logical markup for e-mail address:

```
186 \langleamsl doc\rangle\def\mail{\texttt}
```

Shorthand for indexing:

```
187 \langle*amsl doc\rangle
188 \def\##1{\def\@tempa{#1}\def\@tempb{*}%
189 \ifx\@tempa\@tempb \expandafter\index
190 \else #1\index{#1}\fi}
191 \rangle/amsldoc\rangle
```

Non-indexed `\cn` (maybe call this `\cn*?`)

```
192 \def\ncn#1{\let\index@gobble\cn{#1}}
```

Indexing difficulties with `!`, `@`.

```
193
194 \DeclareRobustCommand{\cnbang}{%
195 \ncn{!}\index{"!\@{\ntt\bslchar\qcbang}}}
196 \DeclareRobustCommand{\cnat}{%
197 \ncn{!}\index{"@\@{\ntt\bslchar\qcat}}}
```

Shorthand for a discouraged, but not forbidden, line break:

```
198 \def\5{\penalty500 }
Environment for error message examples. Use \meaning to allow reading
the error message text as an ordinary brace-delimited arg but still be able to
print embedded braces; and first change the backslash catcode to prevent extra
spaces after control words.
199 ⟨*amsl doc⟩
200 \newenvironment{error}{%
201   \begingroup\catcode'\=12 \expandafter\endgroup\errora
202 }{%
203   \endtrivlist
204 }
205 \newcommand{\errora}[1]{%
206   \trivlist
207   \item[\hskip\labelsep\errorbullet\enspace
208     \ntt\frenchspacing\def\@tempa{#1}%
209     \expandafter\strip@prefix\meaning\@tempa]\leavevmode\par
210 }
```

`\errorbullet` is just an attempt at a simple graphic device that doesn't require any special fonts.

```
211 \newcommand{\errorbullet}{\rule[-.5pt]{2.5pt}{7.5pt}%
212   \rule[-.5pt]{5pt}{2.5pt}\kern-2.5pt%
213   \rule[4.5pt]{2.5pt}{2.5pt}}
214 ⟨/amsl doc⟩
```

A couple of subheading commands:

```
215 \newcommand{\errexa}{\par\noindent\textit{Example}:\ }
216 \newcommand{\errexpl}{\par\noindent\textit{Explanation}:\ }
```

4 amsldoc style modifications for sectioning commands

The following section deals with book commands (part, chapter, frontmatter, ...).

```
217 ⟨*amsl doc⟩
Modifications of sectioning commands from book.cls, mostly reducing font
sizes and vertical spacing.
218 \renewcommand\frontmatter{\clearpage
219   \@mainmatterfalse\pagenumbering{roman}}
220 \renewcommand\mainmatter{\clearpage
221   \@mainmattertrue\pagenumbering{arabic}}
222 \renewcommand\backmatter{\clearpage \@mainmatterfalse}
223 \renewcommand\part{\clearpage
224   \thispagestyle{plain}%
225   \if@twocolumn
226     \onecolumn
```

```

227             \@tempwatruue
228             \else
229             \@tempwafalse
230             \fi
231             \hbox{}\vfil
232             \secdef\@part\@spart}
233 \def\@part[#1]#2{%
234   \ifnum \c@secnumdepth >-2\relax
235     \refstepcounter{part}%
236     \addcontentsline{toc}{part}{\thepart\hspace{1em}#1}%
237   \else
238     \addcontentsline{toc}{part}{#1}%
239   \fi
240   \markboth{}{}%
241   {\centering
242     \interlinepenalty \@M
243     \reset@font
244     \ifnum \c@secnumdepth >-2\relax
245       \Large\bfseries \partname~\thepart
246       \par
247       \vskip 20\p@
248     \fi
249     \Large \bfseries #2\par}%
250   \@endpart}
251 \def\@spart#1{%
252   {\centering
253     \interlinepenalty \@M
254     \reset@font
255     \Large \bfseries #1\par}%
256   \@endpart}
257 \def\@endpart{\vfil\newpage
258             \if@twoside
259             \hbox{}%
260             \thispagestyle{empty}%
261             \newpage
262             \fi
263             \if@tempswa
264             \twocolumn
265             \fi}
266 </amsldoc>
267 \renewcommand\chapter{\par \@afterindentfalse
268                   \secdef\@chapter\@schapter}
269 \def\@chapter[#1]#2{\ifnum \c@secnumdepth >\m@ne
270                   \if@mainmatter
271                     \refstepcounter{chapter}%
272                     \typeout{\@chapapp\space\thechapter.}%
273                     \addcontentsline{toc}{chapter}%
274                               {\protect\numberline{\thechapter}#1}%
275                   \else

```

```

276             \addcontentsline{toc}{chapter}{#1}\fi
277         \else
278             \addcontentsline{toc}{chapter}{#1}
279         \fi
280         \chaptermark{#1}%
281         \addtocontents{lof}{\protect\addvspace{10\p@}}%
282         \addtocontents{lot}{\protect\addvspace{10\p@}}%
283         \if@twocolumn
284             \@topnewpage[\@makechapterhead{#2}]%
285         \else
286             \@makechapterhead{#2}%
287             \@afterheading
288         \fi}
289 \def\@makechapterhead#1{%
290     \vspace{1.5\baselineskip}%
291     {\parindent \z@ \raggedright \reset@font
292         \ifnum \c@secnumdepth >\m@ne
293             \large\bfseries \@chapapp\space\thechapter
294             \par\nobreak
295             \vskip.5\baselineskip\relax
296         \fi
297         #1\par\nobreak
298         \vskip\baselineskip
299     }}
300 \def\@schapter#1{\if@twocolumn
301             \@topnewpage[\@makeschapterhead{#1}]%
302         \else
303             \@makeschapterhead{#1}%
304             \@afterheading
305         \fi}
306 \def\@makeschapterhead#1{%
307     \vspace*{1.5\baselineskip}%
308     {\parindent \z@ \raggedright
309         \reset@font
310         \large \bfseries #1\par\nobreak
311         \vskip\baselineskip
312     }}

```

Add Donald Arseneau's `\@removefromreset`; used to decouple the footnote counter from `\chapter`, since chapters here do not automatically start on a new page. [bnb, 1999/09/27]

```

\@removefromreset{FOO}{BAR} : Removes counter FOO from the list of
                             counters \c1@BAR to be reset when counter BAR
                             is stepped. The opposite of \@addtoreset.

```

```

313 \def\@removefromreset#1#2{\let\@tempb\@elt
314     \expandafter\let\expandafter\@tempa\c@#1\endcsname
315     \def\@elt##1{\expandafter\ifx\c@##1\endcsname\@tempa\else
316         \noexpand\@elt{##1}\fi}%

```

```

317 \expandafter\edef\csname c1@#2\endcsname{\csname c1@#2\endcsname}%
318 \let\@elt\@tempb}
319 \@removefromreset{footnote}{chapter}

```

Change running head font to `\footnotesize`, nonslanted.

```

320 \def\ps@headings{%
321 \let\@oddfoot\@empty\let\@evenfoot\@empty
322 \def\@evenhead{\thepage\hfil{\footnotesize\leftmark}{}}%
323 \def\@oddhead{\footnotesize\rightmark}{}}\hfil\thepage}%
324 \let\@mkboth\markboth
325 \def\chaptermark##1{%
326 \markboth {\uppercase{\ifnum \c@secnumdepth >\m@ne
327 \if@mainmatter
328 \@chapapp\ \thechapter. \ \fi
329 \fi
330 ##1}}}%
331 \def\sectionmark##1{%
332 \markright {\uppercase{\ifnum \c@secnumdepth >\z@
333 \thesection. \ \fi
334 ##1}}}

```

5 amsdtx style modifications for sectioning commands

These definitions for `\maketitle` are from `article.cls`.

```

335 (*amsdtx)
336 \renewcommand\maketitle{\par
337 \begingroup
338 \renewcommand\thefootnote{\fnsymbol{footnote}}%
339 \def\@makefnmark{\hbox to\z@{\m@th^{\@thefnmark}\hss}}%
340 \long\def\@makefntext##1{\parindent 1em\noindent
341 \hbox to1.8em{\hss\m@th^{\@thefnmark}\$}##1}%
342 \if@twocolumn
343 \ifnum \col@number=\@ne
344 \maketitle
345 \else
346 \twocolumn[\maketitle]%
347 \fi
348 \else
349 \newpage
350 \global\@topnum\z@ % Prevents figures from going at top of page.
351 \maketitle
352 \fi
353 \thispagestyle{plain}\@thanks
354 \endgroup
355 \setcounter{footnote}{0}%
356 \let\thanks\relax
357 \let\maketitle\relax\let\@maketitle\relax
358 \gdef\@thanks{} \gdef\@author{} \gdef\@title{}

```

```

359 %
360 \def\@maketitle{%
361   \newpage
362   \null
363   \vskip 2em%
364   \begin{center}%
365     {\LARGE \@title \par}%
366     \vskip 1.5em%
367     {\large
368       \lineskip .5em%
369       \begin{tabular}[t]{c}%
370         \@author
371         \end{tabular}\par}%
372     \vskip 1em%
373     {\large \@date}%
374   \end{center}%
375   \par

```

Put the title into both running heads.

```

376   \uppercase\expandafter{\expandafter\toks@\expandafter{\@title}}%
377   \edef\@tempa{\noexpand\markboth{the\toks@}{the\toks@}}%
378   \@tempa
379   \vskip 1.5em}
380 \end{amsdtx}

```

Edit the table of contents.

```

381 \end{amsdtx}
382 \renewcommand\tableofcontents{%
383   \if@twocolumn
384     \@restonecoltrue\onecolumn
385   \else
386     \@restonecolfalse
387   \fi
388   \subsection*\{\contentsname}%
389   \@starttoc{toc}%
390   \if@restonecol\twocolumn\fi
391   }
392 \end{amsdtx}

```

Edit the sectioning commands.

```

393 \renewcommand\section{\@startsection {section}{1}{\z@}%
394     {- .6\baselineskip \@plus -3\p@}%
395     {.4\baselineskip}
396 \end{amsdtx}
397 \end{amsldoc}
398 \renewcommand\subsection{\@startsection{subsection}{2}{\z@}%
399     {- .3\baselineskip \@plus -2\p@}%
400     {.2\baselineskip}%
401 \end{amsdtx}
402 \end{amsldoc}
403 \renewcommand\subsubsection{\@startsection{subsubsection}{3}{\z@}%

```

```

404                                     {- .2\baselineskip\@plus -2\p@}%
405                                     {.2\baselineskip}%
406                                     {\reset@font\normalsize\bfseries}}

```

Change index environment to turn off \autoindex.

```

407 \renewenvironment{theindex}{%
408   \if@twocolumn \@restonecolfalse \else \@restonecoltrue \fi
409   \columnseprule \z@ \columnsep 35\p@
410   \let\autoindex\@gobble
411   \amsdtx \twocolumn[\section*{\indexname}]%
412   \amsl doc \twocolumn[\@makeschapterhead{\indexname}]%
413   \addcontentsline{toc}{chapter}{\indexname}%
414   \@mkboth{\uppercase{\indexname}}{\uppercase{\indexname}}%
415   \thispagestyle{plain}\parindent\z@
416   \parskip\z@ \@plus .3\p@\relax
417   \let\item\@idxitem
418 }{%
419   \if@restonecol\onecolumn\else\clearpage\fi
420 }

```

Take out \thechapter from \thesection.

```

421 \amsdtx\renewcommand{\thesection}{\arabic{section}}

```

Change the style of captions slightly. Also incorporate some caption improvements from Donald Arseneau (comp.text.tex, 11 Oct 1994).

```

422 \long\def\@makecaption#1#2{%
423   \addvspace\abovecaptionskip
424   \begingroup
425     \countdef\@parcycles=8 % local count register
426     \@parcycles\z@
427     \@setpar{\advance\@parcycles\@ne \ifnum\@parcycles>999
428       \@par\@parcycles\z@\fi
429       \ifhmode \unskip\hskip\parfillskip\penalty-\@M\fi}%
430     \@hangfrom{\textbf{#1.} } \vadjust{\penalty\@m\@ne}\#2%
431   \endgroup
432   \ifhmode\unpenalty\fi\par
433   \ifnum\lastpenalty=\@m\@ne % only one line in the caption
434     \unpenalty \setbox\@tempboxa\lastbox
435     \nointerlineskip
436     \hbox to\hsize{\hfill\unhbox\@tempboxa\unskip\hfill}%
437   \fi
438   \nobreak\vskip\belowcaptionskip
439 }

```

For table captions, assume top captions and so put space below the caption rather than above:

```

440 \renewenvironment{table}{%
441   \belowcaptionskip\abovecaptionskip \abovecaptionskip\z@skip
442   \@float{table}%
443 }{%
444   \end@float

```

```

445 }
446 \renewenvironment{table*}{%
447   \belowcaptionskip\abovecaptionskip \abovecaptionskip\z@skip
448   \@dblfloat{table}%
449 }{%
450   \end@dblfloat
451 }

```

6 Float placement parameters

These control the placing of floating objects like tables and figures. The values here, which are much more tolerant than the L^AT_EX defaults, are more or less copied from `amsclass.dtx`.

```

452 \setcounter{topnumber}{4}\setcounter{bottomnumber}{4}
453 \setcounter{totalnumber}{4}\setcounter{dbltopnumber}{4}
454 \renewcommand{topfraction}{.97}\renewcommand{bottomfraction}{.97}
455 \renewcommand{textfraction}{.03}\renewcommand{floatpagefraction}{.9}
456 \renewcommand{dbltopfraction}{.97}
457 \renewcommand{dblfloatpagefraction}{.9}
458 \setlength{floatsep}{8pt plus6pt}
459 \setlength{textfloatsep}{10pt plus8pt}
460 \setlength{intextsep}{8pt plus6pt}
461 \setlength{dblfloatsep}{8pt plus6pt}
462 \setlength{dbltextfloatsep}{10pt plus8pt}
463 \setlength{@fptop}{0pt}\setlength{@fpsep}{8pt}%
464 \setlength{@fpbot}{0pt plus 1fil}
465 \setlength{@dblftop}{0pt}\setlength{@dblfpsep}{8pt}%
466 \setlength{@dblfpbot}{0pt plus 1fil}
467 \pagestyle{headings}

```

Make `|...|` shorthand for verbatim fragments. In the case of the `amslldoc` class, we avoid requiring an extra package (`doc` or `shortvrb`), to reduce the possibility of package files not being found at run time.

```

468 <*amslldoc>
469 \AtBeginDocument{\catcode'\|= \active }
470 \def\activevert{\verb|}
471 \expandafter\gdef\expandafter\dospecials\expandafter
472   {\dospecials \do\|}%
473 \expandafter\gdef\expandafter\@sanitize\expandafter
474   {\@sanitize \@makeother\|}
475 \begingroup\catcode'\|= \active \gdef|{\protect\activevert{}}\endgroup
476 </amslldoc>

```

`\arrayargpatch` If the column-specs arg of `array` or `tabular` contains a vert bar character, and we have made vert bars active, it will cause trouble. The following command, used in the `ctab` environment, prevents the trouble.

```

477 \newcommand{\arrayargpatch}{%
478   \let\@oldarray\@array
479   \edef\@array[##1]##2{\catcode\number'\|= \number\catcode'\|

```

```

480 \catcode\number'\@=\number\catcode'\@ \relax
481 \let\noexpand\@array\noexpand\@oldarray
482 \noexpand\@array[##1]{##2}}%
483 \catcode'\|=12 \catcode'\@=12 \relax
484 }

```

`ctab` An environment for centered tables.

```

485 \newenvironment{ctab}{%
486 \par\topsep\medskipamount
487 \trivlist\centering
488 \item[]%
489 \arrayargpatch
490 \begin{tabular}%
491 }{%
492 \end{tabular}%
493 \endtrivlist
494 }

```

Load `doc` package, reset `\AltMacroFont` to be the same as `\MacroFont` (when there are large sections of conditional code I think it looks better not to have it all slanted).

```

495 \amsdtx
496 \RequirePackage{doc}
497 \def\AltMacroFont{\MacroFont}

```

`\SpecialMainEnvIndex` Override `doc.sty`'s main environment indexing to get rid of the parens around "environment", for compatibility with our `\env` command.

```

498 \def\SpecialMainEnvIndex#1{%
499 \@bsphack
500 \special@index{%
501 #1\actualchar\string\texttt{#1} environment\encapchar main%
502 }%
503 \special@index{%
504 environments:\levelchar#1%
505 \actualchar\string\texttt{#1}%
506 \encapchar main}%
507 \@esphack
508 }

```

`\SpecialEnvIndex`

```

509 \def\SpecialEnvIndex#1{%
510 \@bsphack
511 \index{#1\actualchar\string\texttt{#1} environment\encapchar usage}%
512 \index{%
513 environments:\levelchar#1%
514 \actualchar\string\texttt{#1}%
515 \encapchar usage}%
516 \@esphack
517 }

```

`\DescribeOption`

```
518 \def\DescribeOption{%
519   \leavevmode
520   \@sphack
521   \begingroup
522     \MakePrivateLetters
523   \Describe@Option
524 }
```

`\Describe@Option`

```
525 \def\Describe@Option#1{%
526   \endgroup
527   \marginpar{\raggedleft\PrintDescribeOption{#1}}%
528   \SpecialOptionIndex{#1}%
529   \@esphack
530   \ignorespaces
531 }
```

`\PrintDescribeOption`

```
532 \def\PrintDescribeOption#1{\strut \MacroFont #1 }
```

`\option`

```
533 \def\option{%
534   \let\SpecialMainEnvIndex\SpecialMainOptionIndex
535   \begingroup
536   \catcode'\12
537   \MakePrivateLetters \m@cro@ \iffalse}
```

`\SpecialMainOptionIndex`

```
538 \def\SpecialMainOptionIndex#1{%
539   \@sphack
540   \special@index{#1\actualchar\string\texttt{#1} option\encapchar main}%
541   \@esphack
542 }
```

`\SpecialOptionIndex`

```
543 \def\SpecialOptionIndex{\@category@index{option}}
```

Ordinary `\DocInput` doesn't handle standardized file headers unless you enclose them in `\iffalse ... \fi` which I don't care to do. So instead here's an alternate version of `\DocInput`, called `\hDocInput`.

```
544 \def\hDocInput#1{\MakePercentIgnore
545   \begingroup
```

Define active `@` which should be the first non-percent, non-equal-sign character when a file header is present. (If a file header is not present, `\hDocInput` should not be used.)

```
546   \begingroup \lccode'\~='\@
547   \lowercase{\endgroup\long\def ~}##1##{%
```

```

548 \catcode'\==12 \skipfileheader{##1}}%
549 \catcode'\@=\active \catcode'\==14 % comment
550 \def\filename{#1}%
551 \@input#1 \MakePercentComment}

552 \def\skipfileheader#1#2 {\endgroup
553 \hGetFileInfo#2 version = "??" date = "??"\@nil
554 \begingroup\catcode'\==9 \catcode'\ =9 \futurelet\0\endgroup
555 }

556 \long\def\hGetFileInfo#1 version = "#2"#3 date = "#4"#5\@nil{%
557 \def\fileversion{#2}\def\filedate{#4}}
558 \</amsdtx>

```

7 Hyphenation exceptions

```
559 \hyphenation{base-line-skip}
```

8 Index exceptions

A bunch of stuff we don't want in code indexes:

```

560 \<amsdtx>
561 \DoNotIndex{\@xp,\@nx,\@empty,\newcommand,\renewcommand}
562 \DoNotIndex{\newenvironment,\renewenvironment,\providecommand}
563 \DoNotIndex{\if,\fi,\ifnum,\fi,\@let@token,\futurelet,\fsa@n}
564 \DoNotIndex{\ignorespaces,\@tempcnta,\@tempcntb,\count@}
565 \DoNotIndex{\toks@,\@ne,\advance}
566 \DoNotIndex{\!,\/, \?, \@, \^, \_}
567 \DoNotIndex{\@@par,\@M,\@auxout,\@bsphack,\@esphack,\@depth,\@ehc}
568 \DoNotIndex{\@for,\@flushglue,\@gobble,\@gobbletwo,\@height,\@idxitem}
569 \DoNotIndex{\@ifnextchar,\@ifstar,\@ifundefined,\@input,\@latexerr}
570 \DoNotIndex{\@makeschapterhead,\@namedef,\@nameuse,\@nil}
571 \DoNotIndex{\@nobreakfalse,\@restonecolfalse,\@restonecoltrue}
572 \DoNotIndex{\@tempa,\@tempb,\@tempc,\@tempf}
573 \DoNotIndex{\@temptokena,\@temptokenb}
574 \DoNotIndex{\@themark,\@width}
575 \DoNotIndex{\active,\aindex,\baselineskip,\begin,\begingroup,\box}
576 \DoNotIndex{\c@page,\catcode,\chapter,\char,\chardef,\closeout}
577 \DoNotIndex{\CodelineIndex,\sp,\sb,\label,\leavevmode,\mark}
578 \DoNotIndex{\mark,\newinsert,\newwrite,\newtoks,\xdef}
579 \DoNotIndex{\columnsep,\columnseprule,\columnwidth,\csname,\def}
580 \DoNotIndex{\dimen,\do,\DocInput,\documentstyle,\edef,\em}
581 \DoNotIndex{\EnableCrossrefs,\end,\endcsname,\endgroup,\endinput}
582 \DoNotIndex{\everypar,\expandafter,\filedate,\fileversion}
583 \DoNotIndex{\footnotesize,\gdef,\global,\glossary,\hangindent}
584 \DoNotIndex{\if@filesw,\else,\fi}
585 \DoNotIndex{\if@nobreak,\if@twocolumn,\if@twoside,\fi,\fi,\fi}
586 \DoNotIndex{\hsize,\hskip}
587 \DoNotIndex{\ifhmode,\ifmmode,\ifodd,\ifvmode,\ifx,\fi,\fi,\fi,\fi,\fi}
588 \DoNotIndex{\ifcase,\ifdim,\ifeof,\iffalse,\iftrue,\fi,\fi,\fi,\fi,\fi}
589 \DoNotIndex{\ifcat,\fi}

```

```

590 \DoNotIndex{\immediate,\insert,\item,\jobname,\long}
591 \DoNotIndex{\let,\lineskip,\marginparsep,\marginparwidth,\maxdimen}
592 \DoNotIndex{\makeatletter,\noexpand,\openout,\protect,\rlap}
593 \DoNotIndex{\min,\newpage,\nobreak,\normalbaselineskip}
594 \DoNotIndex{\normallineskip,\p@,\par,\parfillskip,\parindent,\parskip}
595 \DoNotIndex{\penalty,\relax,\section,\sin,\sloppy,\space,\string}
596 \DoNotIndex{\tableofcontents,\the,\thepage,\thispagestyle,\toks,\tt}
597 \DoNotIndex{\twocolumn,\uppercase,\vbox,\vrule,\vskip,\vss}
598 \DoNotIndex{\write,\z@,\z@skip}
599 </amsdtx>

```

The usual `\endinput` to ensure that random garbage at the end of the file doesn't get copied by `docstrip`.

```
600 \endinput
```

Index

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