

Compatibility mode for L^AT_EX 2 _{ε} emulating L^AT_EX 2.09

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1 Introduction

The file `latex209.def` is read in by L^AT_EX 2 _{ε} whenever it finds a `\documentstyle` rather than `\documentclass` command at the beginning of the file. This indicates a L^AT_EX 2.09 document, which should be processed in *compatibility mode*.

Any document which compiled under L^AT_EX 2.09 should compile under compatibility mode, unless it uses low-level commands such as `\tenrm`.

2 The docstrip modules

The following modules are used in the implementation to direct docstrip in generating the external files:

driver	produce a documentation driver file
head	produce the beginning of <code>latex209.def</code>
tail	produce the end of <code>latex209.def</code>
article	produce <code>article.sty</code>
book	produce <code>book.sty</code>
report	produce <code>report.sty</code>
slides	produce <code>slides.sty</code>
letter	produce <code>letter.sty</code>
bezier	produce <code>bezier.sty</code>
fleqn	produce <code>fleqn.sty</code>
leqno	produce <code>leqno.sty</code>
openbib	produce <code>openbib.sty</code>

Between the `head` and `tail` of `latex209.def`, the code for `oldlfont.sty` is included, so L^AT_EX 2.09 documents will automatically be run simulating the OFSS.

3 Driver

This section contains the driver for this documentation.

```
1 <*driver>
2 \documentclass{ltxdoc}
3 \DisableCrossrefs
4 % \OnlyDescription
5 \begin{document}
6   \DocInput{latex209.dtx}
7 \end{document}
8 </driver>
```

4 Beginning of `latex209.def`

This section describes the beginning of the file `latex209.def`.

```
9 <*head>
```

4.1 Identification

This file needs to be run with L^AT_EX 2 _{ε} .

10 \NeedsTeXFormat{LaTeX2e}

Describe the file.

11 \ProvidesFile{latex209.def}[1998/05/13 v0.52 Standard LaTeX file]

Announce compatibility mode to the user.

4.2 Compatibility flag

`\@compatibilitytrue` L^AT_EX 2_E has a flag `\if@compatibility` which can be used by document classes or packages to determine whether they are running in compatibility mode or not. This flag is set true by this file.

42 \@compatibilitytrue

4.3 Removing features

```

\usepackage{listfiles} These LATEX 2 $\varepsilon$  commands are switched off in compatibility mode. This is done by
\ensuremath{ } saving the old definition, and redefining the command to call \@latex@error
\ensuremath{ } before executing the old version.

\lrbox{43 \def\@tempa#1#2{%
\newcommand{44 \expandafter\let\csname @@\string#1\endcsname#1%
{45 \edef#1{%
{46 \noexpand\@latex@error{\noexpand#2}%
{47 \expandafter\noexpand\csname @@\string#1\endcsname
{48 }%
{49 }%
{50 \@tempa\usepackage\usepackage{listfiles}%
{51 \@tempa\listfiles\listfiles{%
{52 \@tempa\ensuremath\ensuremath{ }

```

```

53 \@tempa\lrbox{\begin{lrbox}}%
54 \@tempa\xargdef{\newcommand{cmd}[args][def]}{%
\@latex@e@error This error is produced if a user uses a LATEX 2 $\varepsilon$  command in compatibility mode. This is to encourage users to move over to using \documentclass as quickly as possible. During the preamble the error does nothing (so that packages can use LATEX 2 $\varepsilon$  commands) but it is redefined to be an error message at \begin{document}.
55 \let\@latex@e@error\gobble
56 \def\@latex@e@error#1{%
57   \@latexerr{%
58     LaTeX2e command \string#1\space in LaTeX 2.09 document%
59   }{%
60     This is a LaTeX 2.09 document, but it contains
61     \string#1.^J%
62     If you want to use the new features of LaTeX2e,
63     your document^J%
64     should begin with \string\documentclass\space
65     rather than \string\documentstyle
66   }%
67 }
\@ifdefinable \old@ifdefinable \@@ifdefinable \@latex@e@commands We trap the \notdefinable error message to check to see if the command is a LATEX 2 $\varepsilon$  command, in which case we allow the definition to happen. We keep a list of commands which are allowed to be redefined this way in \@latex@e@commands, and remove an entry each time it is defined.
68 \let\old@ifdefinable\ifdefinable
69 \long\def\ifdefinable#1{%
70   \def\@tempa##1##2##3##4\@tempa{%
71     \def\@latex@e@commands{##1##2}%
72     ##3##3 will either be \iftrue or \iffalse
73     \expandafter\@firstofone
74   \else
75     \expandafter\old@ifdefinable\expandafter#1%
76   \fi
77 }%
78 \expandafter\@tempa\@latex@e@commands#1\iftrue#1\iffalse#1\@tempa%
79 }
80 \let\@ifdefinable\ifdefinable
81 \def\@latex@e@commands{%
82   \usepackage{listfiles}\ensuremath{LaTeXe}\lrbox
83   \th\dh\ng\dj\TH\DH\NG\DJ\k\r\SS
84   \guillemotleft\guillemotright\guilsinglleft
85   \guilsinglright\quotedblbase\quotesinglbase
86 }
\begin@tempboxa If we were to switch off the new \width, \height and \depth commands, this is how to do it. This isn't done, since these commands may be used in packages.
\long\def\begin@tempboxa#1#2{%
\begin{group}
\setbox\@tempboxa#1{\{#2\}}}

```

4.4 Document class hook

```
\@documentclasshook This macro is called by each use of \documentclass. We define it to define \normalsize and \normalsize if necessary, to input each unused option as a package, and to switch off the new LATEX 2 $\varepsilon$  commands. However, we leave on the commands \settoheight, \settowidth and the new options to \parbox and \minipage, since these are likely to be used in packages.
```

The intention of the strange `\normalsize` tests below is that after the `\documentstyle` command has completed, if neither `\normalsize` nor `\@normalsize` was defined by the main style or one of its ‘substyles’ or ‘options’, then `\@normalsize` will be undefined and `\normalsize` will generate an error saying it hasn’t been defined.

If the style defined either `\normalsize` or `normalsize` then these two commands will be `\let` equal to each other, with the definition given by the style file.

If the style defines both `\normalsize` and `\@normalsize` then those two definitions are kept.

```

87 \def\@documentclasshook{%
88   \RequirePackage\@unusedoptionlist
89   \let\@unusedoptionlist\@empty
90   \def\@tempa{\@normalsize}%
91   \ifx\normalsize\@tempa
92     \let\normalsize\@normalsize
93   \fi
94   \ifx\@normalsize\@undefined
95     \let\@normalsize\normalsize
96   \fi
97   \ifx\normalsize\@undefined
98     \let\normalsize\original@normalsize
99   \fi
100  \let\@latex@e@error\@latex@e@error@}

```

`\original@normalsize` Save the original definition of `\normalsize` (which generates an error)
`101 \let\original@normalsize\normalsize`

`\normalsize` Some styles don’t define `\normalsize`, just `\@normalsize`.
`102 \def\normalsize{\@normalsize}`

4.5 Compatibility with L^AT_EX 2.09 document styles

`\@missingfileerror` If a `.cls` file is missing, we look to see if there is a file of the same name with a `.sty` extension.

```

103 \@ifundefined{saved@missingfileerror}{
104   \let\saved@missingfileerror=\@missingfileerror
105 }{%
106 \def\@missingfileerror#1#2{%
107   \ifx#2@\clsextension
108     \InputIfFileExists{#1.\@pkgextension}{%
109       \wlog{Compatibility mode: loading #1.\@pkgextension
110           \space rather than #1.#2.}%
111     }{%
112       \saved@missingfileerror{#1}{#2}%
113     }%
114   \else
115     \saved@missingfileerror{#1}{#2}%
116   \fi
117 }

```

`\@obsoletefile` For compatibility with the document styles which `\input` the standard L^AT_EX 2.09 document styles, we distribute files called `article.sty`, `book.sty`, `report.sty`, `slides.sty` and `letter.sty`. These use the command `\@obsoletefile`, which the L^AT_EX 2_ε kernel defines to produce a warning message. We redefine it to just produce a message in the log file, and to pass any options from the old filename to the new filename.

```

118 \def\@obsoletefile#1#2{%
119   \expandafter\let\csname opt@#1\expandafter\endcsname
120   \csname opt@\currname.\currext\endcsname

```

```

121      \wlog{Compatibility mode: inputting '#1'
122          instead of obsolete '#2'.}}
123
\footheight \LATEX 2.09 supported these parameters, so for compatibility with old document
\@maxsep styles we allocate them.
\@dblmaxsep 123 \newdimen\footheight
124 \newdimen\@maxsep
125 \newdimen\@dblmaxsep
126
\mark \LATEX 2.09 initialized an empty mark. Who knows, someone may have relied on
it:
126 \mark{{}{}}



## 4.6 Layout


\@sloppy There is a new version of \sloppy in LATEX 2E, so we restore the old one.
127 \def\sloppy{\tolerance \OM \hfuzz .5\p@ \vfuzz .5\p@}
\@finalstrut The strut which is used in a footnote has changed. This restores the old definition.
128 \def\@finalstrut#1{\unskip\strut}
\@marginparreset Restore the old spacing around floats.
\@floatboxreset 129 \let \@marginparreset \empty
130 \let \@floatboxreset \empty
\proclaim From plain TEX.
131 \outer\def\proclaim #1. #2\par{%
132   \medbreak
133   \noindent{\bfseries#1.\enspace}{\slshape#2\par}%
134   \ifdim\lastskip<\medskipamount
135     \removelastskip\penalty55\medskip
136   \fi}
\hang From plain TEX.
\textindent 137 \def\hang{\hangindent\parindent}
138 \def\textindent#1{\indent\llap{#1\enspace}\ignorespaces}
\@ttraggedright
139 \def\@ttraggedright{\reset@font\ttfamily\rightskip\z@ plus2em\relax}
\@footnotemark \LATEX 2E version has \nobreak to allow hyphenation.
140 \def\@footnotemark{%
141   \leavevmode
142   \ifhmode\edef\x@sf{\the\spacefactor}\fi
143   \makefnmark
144   \ifhmode\spacefactor\x@sf\fi
145   \relax}
\@textsuperscript Fudge this command to remove the text font command which is always the first
thing in the argument. This is needed as in compatibility mode footnotes are
processed in math mode, but the standard classes call \@textsuperscript in the
definition of \thanks.
146 \def\@textsuperscript#1{$\m@th^{\gobble#1}$}
\@makefnmark \LATEX 2E version uses \textsuperscript rather than math mode.
147 \def\@makefnmark{\hbox{$^{\@thefnmark}\m@th$}}
\thempfootnote \LATEX 2E version has an additional \itshape which would not work (and would
not make sense) in math mode.
148 \def\thempfootnote{\@alph\c@mpfootnote}

```

\@fnsymbol L^AT_EX version uses \ensuremath which does not work in compatibility mode.

```
149 \def\fnsymbol#1{\ifcase#1\or *\or \dagger\or \ddagger\or
150   \mathchar "278\or \mathchar "27B\or |\or **\or \dagger\dagger
151   \or \ddagger\ddagger \else\@ctrerr\fi}
```

\@inmathwarn L^AT_EX (1995/12/01) checks for text commands being used in math mode. We switch this off in compatibility mode.

```
152 \let\@inmathwarn\gobble
```

4.7 Verbatim

\verb We restore the old definition of \verb, but using \verb@font rather than \sverb. The use of \bgroup and \egroup allows us to prefix it with \hbox in math mode.

```
153 \def\verb{%
154   \relax\ifmmode\hbox\fi\bgroup
155   \noligs
156   \verb@font
157   \let\do\@makeother \dospecials
158   \@ifstar{\sverb}{\verb}%
159 }
160 \def\sverb#1{%
161   \def\@tempa ##1{\leavevmode\null##1\egroup}%
162   \@tempa
163 }
```

\verbatim@nolig@list The only ligatures which should be switched off in 2.09 mode are the Spanish punctuation.

```
164 \def\verbatim@nolig@list{\do\`{}}
```

\@lquote We restore the old definition of \@lquote in case any packages use it.

```
165 \def\@lquote{\leavevmode{\kern\z@\`{}}}
```

4.8 Character codes

By default, L^AT_EX 2 _{ε} makes the input characters 0–8, 11, 14–31 and 128–255 illegal. In compatibility mode, we restore their old meanings.

```
166 \catcode0=9
167 \@tempcnta=1
168 \loop\ifnum \@tempcnta<32
169   \catcode\@tempcnta=12
170   \advance\@tempcnta by 1
171 \repeat%
172 \catcode'\^I=10\relax%
173 \catcode'\^L=13\relax%
174 \catcode'\^M=5\relax%
175 \catcode127=15
176 \@tempcnta=128
177 \loop\ifnum \@tempcnta<256
178   \catcode\@tempcnta=12
179   \advance\@tempcnta by 1
180 \repeat%
```

4.9 Miscellaneous commands

\SLiTeX The SLiTeX logo.

```
181 \DeclareRobustCommand{\SLiTeX}{{\%
182   \normalfont S\kern -.06em
183   {\scshape l\kern -.035em i}\kern -.06em
184   \TeX\%}}
```

\+ The \+ command should be defined, so that it can be used in \renewcommand.

185 \let\+\@empty

\@cla LATEX2.09 (and early versions of LATEX 2 ε) used these count registers in the definition of \cline and \multispan. Declare them here in case they were used for any other purposes.

186 \newcount\@cla
187 \newcount\@clb
188 \newcount\mscount

\@imakepicbox picture mode version

189 \long\def\@imakepicbox(#1,#2)[#3]#4{%

190 \vbox to#2\unitlength

191 {\let\mb@b\vss \let\mb@l\hss\let\mb@r\hss

192 \let\mb@t\vss

193 \@tfor\reserved@a :=#3\do{%

194 \if s\reserved@a

195 \let\mb@l\relax\let\mb@r\relax

196 \else

197 \expandafter\let\csname mb@\reserved@a\endcsname\relax

198 \fi} %

199 \mb@t

200 \hb@xt@ #1\unitlength{\mb@l #4\mb@r} %

201 \mb@b

This kern ensures that a b option aligns on the bottom of the text rather than the baseline. this is the documented behaviour in the LATEXBook. The kern is removed in compatibility mode.

Remove kern for bug compatibility with 2.09.

202 \% \kern\z@
203 }}

\supereject

204 \def\supereject{\par\penalty-\@MM}

\nofiles This old version might change the vertical spacing when it is used. Some old document might depend on that changed spacing so...

205 \def\nofiles{%

206 \@fileswfalse

207 \typeout{No auxiliary output files.^J}%

208 \long\def\protected@write##1##2##3{}%

209 \let\makeindex\relax

210 \let\maketitle\relax}

4.10 Packages and classes

\ProvidesPackage We redefine \ProvidesPackage and \ProvidesClass to produce a log message rather than a warning if they find an unexpected file.

211 \def\ProvidesPackage#1{%

212 \xdef\@gtempa{\#1}%

213 \ifx\@gtempa\@currname\else

214 \wlog{Compatibility mode: \@cls@pkg\space`@\currname' requested,
215 but '#1' provided.} %

216 \fi

217 \@ifnextchar[\@pr@videopackage{\@pr@videopackage[]}] %

218 \let\ProvidesClass=\ProvidesPackage

That ends the head of latex209.def.

219 </head>

5 Middle of latex209.def

At this point, the code for `oldlfont.sty` is read in by the installation script.

6 End of latex209.def

This section describes the end of `latex209.def`.

220 `(*tail)`

6.1 Font commands

\ds@oldlfont We declare `oldlfont`, `newlfont`, `margid` and `nomargid` options to mimic the L^AT_EX 2.09 NFSS1 options.
221 \def\ds@oldlfont{%

\ds@margid 222 \no@font@optfalse
223 \let\math@bgroup\empty
224 \let\math@egroup\empty
225 \let\@@math@bgroup\math@bgroup
226 \let\@@math@egroup\math@egroup
227 }
228 \def\ds@newlfont{%

\ds@nomargid 229 \no@font@optfalse
230 \OptionNotUsed
231 }
232 \def\ds@margid{%

233 \no@font@optfalse
234 \let\math@bgroup\bgroup
235 \def\math@egroup##1{##1\egroup} %
236 \let\@@math@bgroup\math@bgroup
237 \let\@@math@egroup\math@egroup
238 }
239 \let\ds@nomargid\ds@oldlfont
240 \onlypreamble\ds@oldfont
241 \onlypreamble\ds@newfont
242 \onlypreamble\ds@margid
243 \onlypreamble\ds@nomargid

\encodingdefault The default encoding for old documents is OT1 rather than T1.
244 \renewcommand{\encodingdefault}{OT1}

\cmex/m/n/10 Just in case a document style relies on `\cmex/m/n/10` to exist (which may have been hard-wired to `\fam3`) we load the font.
245 \expandafter\font\csname cmex/m/n/10\endcsname=cmex10

\normalshape These commands were used in older versions of NFSS.
246 \def\normalshape{\fontshape\shapedefault\selectfont}
247 \def\mediumseries{\fontseries\seriesdefault\selectfont}

\DeclareOldFontCommand We redefine `\DeclareOldFontCommand` to do nothing. This means that any new document classes will have their redefinitions of `\rm`, `\bf` etc. ignored.
248 \def \DeclareOldFontCommand #1#2#3{
249 \wlog{Compatibility mode: definition
250 of \string#1\space ignored.} %
251 }

\@halfmag Some font-specifying commands from L^AT_EX 2.09.
252 \def\@halfmag{ scaled \magstephalf}
253 \def\@magscale#1{ scaled \magstep#1 }
254 \def\@ptscale#1{ scaled #100 }

```

\font The current font is set to be CMR 10pt, to match LATEX 2.09.
255 \fontencoding{OT1} \fontfamily{cmr}
256 \fontsize{10}{12} \fontseries{m} \fontshape{n}
257 \selectfont

\load The \load command is no longer needed, it is therefore defined to do nothing.
258 \let\load@gobbletwo

```

Here are three delimiters which have been partly disabled by NFSS2 (the small variants) since the corresponding fonts are normally not preloaded as math symbol fonts.

```

259 \DeclareMathDelimiter{\lgroup} % extensible ( with sharper tips
260     {\mathopen}{bold}{28}{largesymbols}{3A}
261 \DeclareMathDelimiter{\rgroup} % extensible ) with sharper tips
262     {\mathclose}{bold}{29}{largesymbols}{3B}
263 \DeclareMathDelimiter{\bracevert} % the vertical bar that extends braces
264     {\mathord}{typewriter}{7C}{largesymbols}{3E}

```

In old documents we might find some usages of \bfffam etc. Thus we add the following code:

```

265 \let\bfffam\symbolb
266 \let\sffam\symsans
267 \let\itfam\symitalic
268 \let\ttfam\symtypewriter
269 \let\scfam\symsmallcaps
270 \let\slfam\symslanted
271 \let\rmfam\symoperators

```

Below are the \..pt commands with hopefully the same functionality as in the old *1fonts.tex*. Notice that the \baselineskip parameter wasn't set by these commands so that using them now shouldn't set this either. Thus we go low-level. This means that the commands are now fragile but I think they have been fragile before.

```

272 \newcommand\vpt {\edef\f@size{@vpt}\rm}
273 \newcommand\vipt {\edef\f@size{@vipt}\rm}
274 \newcommand\viipt {\edef\f@size{@viiipt}\rm}
275 \newcommand\viipt{\edef\f@size{@viiipt}\rm}
276 \newcommand\xipt {\edef\f@size{@ixpt}\rm}
277 \newcommand\xpt {\edef\f@size{@xpt}\rm}
278 \newcommand\xipt {\edef\f@size{@xipt}\rm}
279 \newcommand\xiupt {\edef\f@size{@xiupt}\rm}
280 \newcommand\xivpt {\edef\f@size{@xivpt}\rm}
281 \newcommand\xviipt{\edef\f@size{@xviipt}\rm}
282 \newcommand\xxpt {\edef\f@size{@xxpt}\rm}
283 \newcommand\xxvpt {\edef\f@size{@xxvpt}\rm}

```

6.2 User customization

For sites which customized their version of L^AT_EX 2.09, we provide a file *latex209.cfg*, which is loaded every time we enter compatibility mode. If the file doesn't exist, we don't do anything.

```
284 \InputIfFileExists{latex209.cfg}{}{}
```

That ends the file *latex209.def*.

```
285 </tail>
```

7 Obsolete style files

For each of the standard L^AT_EX 2.09 document styles, we produce a file which points to the appropriate L^AT_EX 2 _{ε} document class file. This means that any styles which say \input *article.sty* should still work.

```

286 <*article | book | report | letter | slides>
287 \NeedsTeXFormat{LaTeX2e}
288 </article | book | report | letter | slides>
289 <*article>
290 \@obsoletefile{article.cls}{article.sty}
291 \LoadClass{article}
292 </article>
293 <*book>
294 \@obsoletefile{book.cls}{book.sty}
295 \LoadClass{book}
296 </book>
297 <*report>
298 \@obsoletefile{report.cls}{report.sty}
299 \LoadClass{report}
300 </report>
301 <*letter>
302 \@obsoletefile{letter.cls}{letter.sty}
303 \LoadClass{letter}
304 </letter>
305 <*slides>
306 \@obsoletefile{slides.cls}{slides.sty}
307 \LoadClass{slides}
308 </slides>

```

We also produce empty `fleqn.sty` and `leqno.sty` files in case anyone has `\input` one of them.

```

309 <*fleqn>
310 \@obsoletefile{fleqn.clo}{fleqn.sty}
311 \input{fleqn.clo}
312 </fleqn>
313 <*leqno>
314 \@obsoletefile{leqno.clo}{leqno.sty}
315 \input{leqno.clo}
316 </leqno>

```

We also produce an empty `openbib.sty` in case anyone has `\input openbib.sty`. The `openbib` class option is now part of the kernel.

```

317 <*openbib>
318 \iffalse
319
320 The openbib option is now part of LaTeX thus this package is no
321 longer necessary. It is only retained for upward compatibility.
322 See the 2nd edition of the LaTeX book, or the file usrguide.tex
323 which comes with the LaTeX distribution, for more details.
324
325 \fi
326 </openbib>

```

We also produce an empty `bezier.sty` in case anyone has `\input bezier.sty`. The `\bezier` command is now part of the kernel.

```

327 <*bezier>
328 \iffalse
329
330 The \bezier command is now part of LaTeX thus this package is no
331 longer necessary. It is only retained for upward compatibility.
332 Also, please note that LaTeX now offers an extended bezier command
333 which automatically calculates the number of points needed for the
334 plot. See the 2nd edition of the LaTeX book, or the file
335 usrguide.tex which comes with the LaTeX distribution, for more
336 details.
337
338 \fi
339 </bezier>

```

We also produce a `t1enc` package, for compatibility with the Companion. This has been replaced by the `fontenc` package.

```
340 <*t1enc>
341 \NeedsTeXFormat{LaTeX2e}
342 \ProvidesPackage{t1enc}[1994/06/01 Standard LaTeX package]
343 \renewcommand{\encodingdefault}{T1}
344 \fontencoding{T1}\selectfont
345 </t1enc>
```