REVTeX 4 Command and Options Summary

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This is the *REVTeX 4 Command and Options Summary.* It details usage for many of the new commands and options that are available in REVTeX 4. Please see the *REVTeX 4 Author's Guide* for complete information on how to use REVTeX 4. Class options for the `\documentclass` line are marked with square brackets. Environments are indicated by `\begin{<env>}` and always require a matching `\end{<env>}`.

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TABLE I: REVTeX 4 Command Summary

REVTeX 4/LaTeX 2ε Markup	**Details and Usage**
	Frequently Used Class Options
`[aps]`	*American Physical Society* styling. Default.
`[prl]`,`[pra]`,`[prb]`,`[prc]`,`[prd]`,`[pre]`,`[prstab]`	Further customize `[aps]` styling for *Physical Review* journals.
`[rmp]`	Further customize `[aps]` styling for *Reviews of Modern Physics.*
`[twocolumn]`	Two column formatting.
`[onecolumn]`	Single column formatting.
`[preprint]`	Single column formatting with increased interline spacing.
`[10pt]`,`[11pt]`,`[12pt]`	Set font size. `[preprint]` gives `[12pt]`, `[twocolumn]` gives `[10pt]` by default.
`[groupedaddress]`	Group authors with same affiliations together. Default.
`[superscriptaddress]`	Associate authors with affiliations via superscript numbers. Appropriate for collaborations or if several authors share some, but not all, affiliations.
`[draft]`	Mark overfull lines.
`[amsfonts]`,`[noamsfonts]`	Load (don't load) `amsfonts` package. Adds AMS font support.
`[amssymb]`, `[noamssymb]`	Load (don't load) `amssymb` package. Adds additional AMS symbols.
`[amsmath]`, `[noamsmath]`	Load (don't load) `amsmath` package. Adds AMS-LaTeX features.
	Other Class Options
`[preprintnumbers]`,`[nopreprintnumbers]`	Control display of preprint numbers given by `\preprint` command. `[preprintnumbers]` is default for `[preprint]`; otherwise `[nopreprintnumbers]` is default.
`[floatfix]`	Invoke emergency processing to avoid the LaTeX error ``` ``Too many unprocessed floats'' ``` or all subsequent floats being moved to the end of the job. REVTeX 4 will display a message recommending this option if warranted.
`[bibnotes]`,`[nobibnotes]`	Control location of author footnotes. Default varies with journal style.
`[footinbib]`,`[nofootinbib]`	Control location of footnotes. Default varies with journal style.

REVTEX 4/LATEX 2ε Markup	**Details and Usage**
[altaffilletter], [altaffillsymbol]	Use letters or symbols for \altaffiliation superscripts. [altaffillsymbol] is default.
[unsortedaddress]	Like [groupedaddress], but doesn't combine authors together who share the same affiliations.
[runinaddress]	Like [groupedaddress], but joins multiple affiliations together into a single sequence separated by commas.
[showpacs],[noshowpacs]	Control display of PACS: line.
[showkeys],[noshowkeyws]	Control display of Keywords: line.
[tightenlines]	Single space manuscript (for use with [preprint]).
[floats]	Position floats near call outs. Default.
[endfloats]	Move all floats to the end of the document.
[endfloats*]	Move all floats to the end of the document and put each on a separate page.
[titlepage],[notitlepage]	Control appearance of title page.
[final]	Don't mark overfull lines. Default.
[letterpaper],[a4paper], [a5paper]	Select paper size. [letterpaper] is default.
[oneside],[twoside]	Control book syle layout. [oneside] is default.
[fleqn]	Flush displayed equations left.
[eqsecnum]	Number equations by section.
[balancelastpage],[nobalancelastpage]	Control [twocolumn] balancing on last page. [balancelastpage] is default.
[raggedbottom],[flushbottom]	Control [twocolumn] balancing. [flushbottom] is default.
[raggedfooter],[noraggedfooter]	Control positioning of footer. [noraggedfooter] is default.
[byrevtex]	Display "Typeset by REVTEX 4".
[citeautoscript]	Fix up spacing and punctuation when switching from non-superscript style citations to superscript citation styles. \cite commands and associated spacing and punctuation should be as for the non-superscript style.
[galley]	Typeset in a single narrow column.

Frontmatter Commands

\title{<title>}	The manuscript title.
\author{One Author}	Specify one author's name.
\surname{Llyod Weber},\surname{Mao}	Indicate which part of a name within \author should be used for alphabetizing and indexing.
\email[<optional text>]{author@any.edu}	Specify an e-mail address for an author.
\homepage[<optional text>]{http://any.edu/homepage/}	Specify a URL for an author's web site.
\altaffiliation[<optional text>]{affiliation information}	Specify an alternate or temporary address for an author.
\thanks{text}	Additional information about an author not covered by the more specific macros above.
\collaboration{<The Collaboration>}	Specify a collaboration name for a group of authors. Requires [superscriptaddress] and should be placed after the authors.
\affiliation{text}	Specify a single affiliation. Applies to all previous authors without a specified affiliation.
\noaffiliation	For an author or collaboration without an affiliation.
\date{<date>}	Show the date on the manuscript. \date{\today} gives the current date.
\begin{abstract}	Start the manuscript's abstract. Must appear before \maketitle command.
\pacs{<pacs codes>}	PACS codes for manuscript. Multiple PACS codes should be specified together in a single \pacs macro.
\keywords{<keywords>}	Suggested keywords for indexing.

REVTeX 4/LaTeX 2ε Markup	**Details and Usage**
\preprint{<report number>}	Specify an institutional report number to appear in the upper-righthand corner of the first page. Multiple \preprint macros may be supplied, but space may limit how many can appear.
\maketitle	Typeset the title/author/abstract block.

Sectioning Commands

\section{<heading>}, \subsection{<heading>}, \subsubsection{<heading>}	Start a new section or subsection.
\section*{<heading>}	Start a new section without a number.
\appendix	Makes all following sections appendices.
\appendix*	Signifies there is a single appendix section to follow.
\begin{acknowledgments}	Start an Acknowledgments section. Note spelling.
\lowercase{<text>}	Escape a letter or word from being uppercased in a top-level \section heading.

Citation, Footnote, and Cross-referencing Commands

\bibliography{<bib file basename>}	Specify a list of .bib files in which to find references. Read in the resulting .bbl file. For use with BibTeX .
\bibligraphystyle{<bst stylefile>}	Specify a BibTeX (.bst) sytle file to use. APS journal options select the proper default (apsrev or apsrmp).
\begin{thebibliography}	Start the reference section (when not using BibTeX .
\bibitem[<optional text>]{<key>}	Specify a single reference.
\cite{<list of keys>}	Cite one or more references. <key> is same as that of \bibitem.
\onlinecite{<key>}	For superscript style citations, place the corresponding number on the baseline rather than as a superscript.
\bibinfo[<tag>]{<text>}	A pure markup macro that adds tagging information to the components of a reference. REVTeX 4 BibTeX style files automatically add them appropriately. Doesn't affect the typesetting.
\url{<url>}	Typeset a URL (REVTeX 4 automatically loads url.sty).BibTeX styles automatically add this markup.
\eprint{<e-print id>}	Typeset an e-print identifier. BibTeX styles automatically add this markup.
\footnote{<text>}	Create a footnote or endnote in bibliography depending on class options. \footnote within a table will create a footnote attached to the table.
\footnotemark{<key>}, \footnotetext[<key>]{<text>}	In a table, allows for multiple items to share the note.
\label{<key>}	Label an item for cross-referencing. \label should appear within the argument of the cross-referenced item (e.g., \section{\label{<key>}...} or \caption{\label{<key>}...}.
\ref{<key>}	Refer to an item labeled by \label{<key>}.
\pageref{<key>}	Refer to the page on which an item labeled by \label{<key>} appears.

Math and Equation Commands

$	Inline math delimiter.
\begin{equation}	Display numbered one-line equation.
\[, \]	Display unnumbered one-line equation.

REVTeX 4/LaTeX 2ε Markup	**Details and Usage**
\begin{eqnarray}	Display multiple equations together or a long equation that requires multiple lines. Use widetext environment for an equation that must span the page in two-column formatting.
\nonumber	Suppress numbering of an equation with eqnarray.
\begin{eqnarray*}	Display multiple equations with no equation numbering at all.
&	Alignment character for equations within eqnarray.
\\	End a row in eqnarray.
*	Prevent a page break at this point in an eqnarray.
\label{<key>}	Label an equation or group of equations for cross-referencing.
\ref{<key>}	Refer to an equation by its label (e.g., Eq~(ref{<key>})).
\tag{<key}}	Specify an alternative labeling separate from the automatic numbering of equations. Requires [amsmath].
\text{<text>}	Non-italicized text within a math context. Requires [amsmath]. Do not use \rm, \textrm, or \mbox.

Some AMS-LaTeX Commands

\begin{split}	Split equations with alignment.
\begin{multiline}	Split equations without alignment.
\begin{align}	Equation groups with alignment.
\begin{gather}	Equation groups without alignment.
\begin{subequations}	Create an equation array in which each equation is individually numbered (4a, 4b, 4c, etc.) as part of a single group of equations that can be referenced as a whole.
\intertext	Textual interjections witin a display equation.
\usepackage{amscd}	Create commutative diagrams.
\begin{pmatrix}	Matrices with parentheses as delimiters.
\begin{bmatrix}	Matrices with square brackets as delimiters.
\begin{Bmatrix}	Matrices with curly braces as delimiters.
\begin{vmatrix}	Matrices with vertical bars as delimiters.
\begin{Vmatrix}	Matrices with double vertical bars as delimiters.
\hdotsfor	Row of dots in a matrix.
\Hat	Alternative \hat accent for stacking.
\Check	Alternative \check accent for stacking.
\Tilde	Alternative \tilde accent for stacking.
\Acute	Alternative \acute accent for stacking.
\Grave	Alternative \grave accent for stacking.
\Dot	Alternative \dot accent for stacking.
\Ddot	Alternative \ddot accent for stacking.
\Breve	Alternative \breve accent for stacking.
\Vec	Alternative \vec accent for stacking.
\xleftarrow	Extensible left arrow.
\xrightarrow	Extensible right arrow.
\overset	Place a symbol over another.
\underset	Place a symbol under another.
\lvert	Vertical bar with spacing rules appropriate for use as a left delimiter.
\rvert	Vertical bar with spacing rules appropriate for use as a right delimiter.
\lVert	Double vertical bar with spacing rules appropriate for use as a left delimiter.
\rVert	Double vertical bar with spacing rules appropriate for use as a right delimiter.

REVTEX 4/LATEX 2$_\varepsilon$ Markup	**Details and Usage**
\DeclareMathOperator	Declare a new math operator so that spacing and font is correct.
\text	Words and phrases in display math.
\boldsymbol	Make symbol bold. Also available in bm.sty.
\sideset	Sets subscripts and superscripts at the corners of a summation or product.
\substack	Create a stack of subexpressions (for example, stacked summation limits).
\begin{subarray}	Like \substack, but allows finer control of subexpression alignment.
\mathfrak	Replaces \frak.
\mathbb	Replaces \Bbb.
	FONT COMMANDS
\textbf{<text>}	Text boldface font.
\textit{<text>}	Text italicixed font.
\textrm{<text>}	Text Roman font.
\textsl{<text>}	Text Slanted font.
\textsc{<text>}	Text Small Caps font.
\textsf{<text>}	Text Sans Serif font.
\textmd{<text>}	Text Medium Series font.
\textnormal{<text>}	Text Normal Series font.
\textup{<text>}	Text Upright Series font.
\texttt{<text>}	Text Typewriter font.
\mathit{<text>}	Math italics font.
\mathbf{<text>}	Math boldface font.
\mathtt{<text>}	Math typewriter font.
\mathsf{<text>}	Math sans serif font.
\mathcal{<text>}	Math calligraphic font.
\mathfrak{<text>}	Math fraktur font. Requires [amsfonts] or [amssymb].
\mathbb{<text>}	Math blackboard bold font. Requires [amsfonts] or [amssymb].
\bm{<text>}	Bold math symbols (Greek and other symbols). Requires \usepackage{bm}.
	TABLE COMMANDS
\begin{table}[<placement>]	Start a table float environment set to the current column width. The placement options may be any combination of h, t, b, p, or ! signifying here, top, bottom, page, and "as soon as possible", respectively. A placement option of H will allow a long table to break across pages. LATEX may not be able to honor placement requests.
\begin{table*}	Start a non-floating table environment set to the current page width. Will be deferred to the following page.
\begin{ruledtabular}	Adds *Physical Review* style double (Scotch) rules around a table and adjusts the intercolumn spacing.
\begin{tabular}[<position>]{<column specs>}	The \tabular envrionment sets the positions and the number of columns (as well as alignment) in the table.
\begin{tabular*}{<width>}[<position>]{<column specs>}	Like tabular, but with a set width.
\squeezetable	Set table in a smaller font smaller. Place this macro before the \begin{table} line and sandwich everything between \begingroup and \endgroup.

REVTEX 4/LATEX 2_ε Markup	**Details and Usage**
`\begin{longtable}{<column specs>}`	Create a table set to the current column width that spans more than one page or column. `\usepackage{longtable}` required.
`\begin{longtable*}{<column specs>}`	Create a table set to the current page width that spans more than one page. `\usepackage{longtable}` required.
`\caption{<text>}`	Adds a caption for the table.
`\printtables`	With `[endfloats]`, control where the held back tables actually appear.
`\begin{turnpage}`	Rotate a table or figure by 90 degrees (landscape mode). Will put figure or table on a page by itself. Requires `\graphics` package.

Graphics Commands

`\begin{figure}[<placement>]`	Start a figure float environment set to the current column width. The placement options may be any combination of h, t, b, p, or ! signifying here, top, bottom, page, and "as soon as possible", respectively. A placement option of H will allow a long table to break across pages. LATEX may not be able to honor placement requests.
`\begin{figure*}`	Start a non-floating figure environment set to the current page width. Will be deferred to the following page.
`\includegraphics[<scale,rotation>]{figure file}`	Defined by invoking either `\usepackage{graphics}` or `\usepackage{graphicx}`, the standard LATEX 2_ε packages for calling in figures. `graphicx` is the same as `graphics`, but uses key-value pairs for optional arguments.
`\usepackage{epsfig}`	Provides an alternative interface to the `graphics` package similar to the epsf class option in REVTEX 3.
`\printfigures`	With `[endfloats]`, control where the held back figures actually appear.

Miscellaneous Commands

`\begin{widetext}`	Change column width to be the page width. Will add guiding rules.
`\twocolumngrid`	Low-level switch to a two column layout.
`\onecolumngrid`	Low-level switch to a single page-wide column layout.
`\protect`	Protect a fragile command within a macro with a "moving" argument. `\caption` and `\footnote` are common macros that have moving arguments.
`\frac{numerator}{denominator}`	Create a fraction. Use in place of `\over`.

REVTEX 4 and Miscellaneous Symbols

`\texemdash`	—
`\texendash`	–
`\textexclamdown`	¡
`\textquestiondown`	¿
`\textquotedblleft`	“
`\textquotedblright`	”
`\textquoteleft`	‘
`\textquoteright`	’
`\textbullet`	•
`\textperiodcentered`	·
`\textvisiblespace`	␣

REVTEX 4/LATEX 2ε Markup	**Details and Usage**
`\textcompworkmark`	Break a ligature.
`\textcircled{<char>}`	Circle a character. ⓔ.
`\lambdabar`	$\lambdabar$
`\openone`	$\openone$
`\altsuccsim`	$\altsuccsim$
`\altprecsim`	$\altprecsim$
`\alt`	$\lesssim$
`\agt`	$\gtrsim$
`\tensor` x	$\tensor{x}$
`\overstar` x	$\overstar{x}$
`\loarrow` x	$\overleftarrow{x}$
`\roarrow` x	$\vec{x}$
`\mathring{x}`	$\mathring{x}$ (Replaces `\overcir`). Standard LATEX 2ε .
`\dddot{x}`	$\dddot{x}$ (Replaces `\overdots`). Requires `[amsmath]`.
`\triangleq`	$\triangleq$ (Replaces `\corresponds`). Requires `[amssymb]`.
`\biglb` (`\bigrb`)	$\bigl(\bigr)$
`\Biglb` (`\Bigrb`)	$\Bigl(\Bigr)$
`\bigglb` (`\biggrb`)	$\biggl(\biggr)$
`\Bigglb` (`\Biggrb`)	$\Biggl(\Biggr)$