The \texttt{onlyamsmath} package*

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File date 2001/10/04, compiled October 4, 2001

Abstract
This package inhibits the usage of plain \TeX{} and on demand of standard \LaTeX{} math environments. This is useful for class writers who want to force their clients to use the environments provided by the amsmath package.

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1 Usage of the package

Just load the package using \texttt{\usepackage[options]{onlyamsmath}}. If no option is given only the plain \TeX{} environment $$...$$ is “destroyed”. This environment leads to centred equations even with the global option \texttt{flseqn} (force left equations) switched on:

\[
  a = b.
\]

One further option is \texttt{eqnarray} to switch off the \texttt{eqnarray} and \texttt{eqnarray*} environments that add an unwished space before and after the aligned part of the formula as shown here:

\[
  a = b.
\]

*This file is version 0.04 last revision 2001/10/04, documentation from 2001/10/04.
A better result is achieved using the \texttt{align} environment provided by \texttt{amsmath.sty}:

\[ a = b. \]

The most brutal option is \texttt{all} that inhibits the writer to use any of the \TeX\ and \LaTeX\ math environments for non-inlined equations I know (\$\$...\$\$, \texttt{eqnarray}, \texttt{eqnarray*}, \texttt{displaymath}. The inlined mathematical modes ($...$, \( ... \)) still work.

Then instead use the environments provided by \texttt{amsmath.sty}: \texttt{equation}, \texttt{align}, \texttt{gather}, \texttt{flalign}, \texttt{multiline}, \texttt{alignat}, and \texttt{split}. All environments except \texttt{split} have a starred variant. See the User’s Guide of the \texttt{amsmath} package for further details [1].

There are two more options that control the behaviour of the package if you still use one of the “forbidden” environments. If using \texttt{error} which is the default \LaTeX\ generates an error message that reminds you to use the environments of the \texttt{amsmath} package.

If using \texttt{warning} \LaTeX\ only produces warnings and proceeds.

\section*{Acknowledgement}

David Kastrup (David.Kastrup@t-online.de) has written the part handling \$\$. I just have changed the call of the command producing the error message. Since I do not understand his code please don’t ask me things regarding it.

\section{The implementation}

Package header:

1 \texttt{\ProvidesPackage{onlyamsmath} [\onlyamsfiledate
2 v\onlyamsversion\space destroy the standard math environments]}

Load \texttt{amsmath} package:

3 \texttt{\RequirePackage{amsmath}}

\subsection{Options}

All options set a boolean variable which is named simular to the option name.

Define the \texttt{eqnarray} option:

4 \texttt{\newif\ifonlyams@eqnarray}
5 \texttt{\DeclareOption{eqnarray}{\onlyams@eqnarraytrue}}

Define the \texttt{all} option:

6 \texttt{\newif\ifonlyams@all}
7 \texttt{\DeclareOption{all}{
8 \onlyams@alltrue
9 \onlyams@eqnarraytrue
10 }}

Define the \texttt{error} and \texttt{warning} options:

11 \texttt{\newif\ifonlyams@error}
12 \texttt{\onlyams@errortrue}
13 \texttt{\DeclareOption{error}{\onlyams@errortrue}}
14 \texttt{\DeclareOption{warning}{\onlyams@errorfalse}}
Set the default options:
15 \ExecuteOptions{error}
Process the options:
16 \ProcessOptions\relax

2.2 Commands

\onlyams@error  Define a command that produces the error resp. warning messages. The argument specifies the name of the environment that produced the message.
17 \newcommand{\onlyams@error}[1]{%
18 \ifonlyams@error
19 \PackageError{onlyamsmath}{Environment #1 used}{Please use only the
20 environments provided by the amsmath package.}%
21 \else
22 \PackageWarning{onlyamsmath}{Environment #1 used, please use
23 \MessageBreak only the environments provided by the amsmath
24 \MessageBreak package}%
25 \fi
26 }

Here follows the part that is only executed when one of the options eqnarray or all is used:
27 \ifonlyams@eqnarray

\onlyams@eqnarray  Copy the original eqnarray command which is called by the commands \begin{eqnarray} and \begin{eqnarray*} to be able to call it after producing the corresponding error message:
28 \let\onlyams@eqnarray\eqnarray

eqnarray  Redefine the \eqnarray command:
29 \def\eqnarray{%
30 First generate an error or warning message:
31 \onlyams@error{eqnarray or eqnarray*}%
32 Then call the original eqnarray environment:
33 \onlyams@eqnarray%
34 \fi

Here follows the part that is only executed when the option all is used:
35 \ifonlyams@all

displaymath  Redefine the \displaymath command:
34 \def\displaymath{%
35 First generate an error or warning message:
36 \onlyams@error{displaymath}%
37 Then call the \[ environment which normally is called by the displaymath environment:
38 \[
39 \fi
Redefine the $$ environment. This part was written by David Kastrup. Please don’t ask me anything about it.

\dollarcode
\def\dollarcode{\ifx\protect\@typeset@protect
  \expandafter\futurelet\expandafter\next\expandafter\checkdsp
  \else \expandafter$\fi}
\begingroup
\lccode'~='\$
\lowercase{\endgroup\let~}\dollarcode
\def\checkdsp{\ifx\next\dollarcode\expandafter\dspcomplain
  \else$\fi}
\dspcomplain
\def\dspcomplain#1{%If mathmode is active the code has found the second $$ of the environment. The complaint has already made and it is not necessary to do generate one. The environment has to be closed by using \[:
  \ifmmode
    \expandafter [\%
  \else
    \expandafter [\]%
  \fi
\if\mathmode\]%

If the mathmode isn’t active the first $$ of a mathematical environment has been found. First generate the warning or error message:
\-onlyams@error{$$ $$}%
Then start the mathmode by using \[:
\expandafter [\%
\fi

Activate the complaining behaviour at \begin{document} to ensure that packages that internally use $$ can do that without an error:
\AtBeginDocument{\catcode'\$=13 }

References


Change History

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<td>0.02</td>
<td>General: Added switch \nodollardollar</td>
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<td>Removed switches \dollardollar</td>
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0.04
General: Removed code that forbids

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