

The `onlyamsmath` package

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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 `\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 `fleqn` (*force left equations*) switched on:

$$a = b.$$

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

$$a = b.$$

A better result is achieved using the `align` environment provided by `amsmath.sty`:

$$a = b.$$

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

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

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

warning If using `warning` `LATEX` only produces warnings and proceeds.

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.

2 The implementation

Package header:

```
1 <package>\ProvidesPackage{onlyamsmath}
2 <version>\ProvidesFile{onlyamsmath-v.tex}
3 <package,version> [2012/01/01 v0.10 Destroy the standard math environments]
```

Load `amsmath` package:

```
4 \RequirePackage{amsmath}
```

2.1 Options

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

Define the `eqnarray` option:

```
5 \newif\ifonlyams@eqnarray
6 \DeclareOption{eqnarray}{\onlyams@eqnarraytrue}
```

Define the `all` option:

```
7 \newif\ifonlyams@all
8 \DeclareOption{all}{
9   \onlyams@alltrue
10  \onlyams@eqnarraytrue
11 }
```

Define the error and warning options:

```
12 \newif\ifonlyams@error
13 \onlyams@errortrue
14 \DeclareOption{error}{\onlyams@errortrue}
15 \DeclareOption{warning}{\onlyams@errorfalse}
```

Set the default options:

```
16 \ExecuteOptions{error}
```

Process the options:

```
17 \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.

```
18 \newcommand{\onlyams@error}[1]{%
19   \ifonlyams@error
20     \PackageError{onlyamsmath}{Environment #1 used}{Please use only the
21       environments provided by the amsmath package.}%
22   \else
23     \PackageWarning{onlyamsmath}{Environment #1 used, please use
24       \MessageBreak only the environments provided by the amsmath
25       \MessageBreak package}%
26   \fi
27 }
```

Here follows the part that is only executed when one of the options `eqnarray` or `all` is used:

```
28 \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:

```
29 \let\onlyams@eqnarray\eqnarray
```

`eqnarray` Redefine the `\eqnarray` command:

```
30 \def\eqnarray{%
```

First generate an error or warning message:

```
31   \onlyams@error{eqnarray or eqnarray*}%
```

Then call the original `eqnarray` environment:

```
32   \onlyams@eqnarray}
```

```
33 \fi
```

Here follows the part that is only executed when the option `all` is used:

```
34 \ifonlyams@all
```

`displaymath` Redefine the `\displaymath` command:

```
35 \def\displaymath{%
```

First generate an error or warning message:

```
36 \onlyams@error{displaymath}%
```

Then call the `\[` environment which normally is called by the `displaymath` environment:

```
37 \[
```

```
38 \fi
```

Redefine the `$$` environment. This part was written by David Kastrop. Please don't ask me anything about it.

`\dollarcode`

```
39 \def\dollarcode{\ifx\protect\@typeset@protect
```

```
40 \expandafter\futurelet\expandafter\next\expandafter\checkdsp
```

```
41 \else \expandafter$\fi}
```

```
42 \begingroup
```

```
43 \lccode'\~='\$
```

```
44 \lowercase{\endgroup\let~}\dollarcode
```

`\defdsp`

```
45 \def\checkdsp{\ifx\next\dollarcode\expandafter\dspcomplain
```

```
46 \else\expandafter$\fi}
```

Now comes the part that I understand and in which I have made changes.

`\dspcomplain` This command controls the complaint when using `$$`.

```
47 \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 `\]`:

```
48 \ifmmode
```

```
49 \expandafter \]
```

```
50 \else
```

If the `mathmode` isn't active the first `$$` of a mathematical environment has been found. First generate the warning or error message:

```
51 \onlyams@error{$$ $$}%
```

Then start the `mathmode` by using `\[`:

```
52 \expandafter \[
```

```
53 \fi}
```

Activate the complaining behaviour at `\begin{document}` to ensure that packages that internally use `$$` can do that without an error:

```
54 \AtBeginDocument{\catcode'\$=13 }
```

References

- [1] *User's Guide for the amsmath Package*. American Mathematical Society, 1999/12/13.

Change History

0.01		and <code>nodollardollar</code>	2
	General: First version	1	0.04
0.02		General: Removed code that forbids	
	General: Added switch <code>nodollardollar</code>	<code>\[...]</code>	3
	2	0.10
0.03		General: Explicitly state date and	
	General: Changed definition of	version in <code>\ProvidesPackage</code>	
	<code>\dollarcode</code> , by David Kas-	statement	1
	trup	4	Update documentation
	Removed switches <code>dollardollar</code>		1
		Update e-mail address	1

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