

# The latex-lab-mathtools code\*

L<sup>A</sup>T<sub>E</sub>X Project

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Abstract

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## 1 Introduction

This file implements adaptations to the mathtools package needed for the tagging project.

## 2 The Implementation

1 `<@@=math>`

2 `<*kernel>`

### 2.1 File declaration

3 `\ProvidesFile{latex-lab-mathtools.ltx}`

4 `[2024-07-13 v0.1a mathtools adaptations]`

### 2.2 Tagpdf support

To make the code independent from tagging being loaded and active we load the tagpdf-base package:

5 `\RequirePackage{tagpdf-base}`

\*

## 2.3 \shortintertext

Similar to the `\intertext` command from `amsmath`, `\shortintertext` errors with active tagging as it is processed twice which leads to duplicated structures. The fix is similar but is complicated as `mathtools` defines two version (and an additional `\intertext` version) and package options to switch between the variants.

At first we redefine all the internal commands

```
6 \ExplSyntaxOn
7 \tl_new:N\l__math_mathtools_init_tl
8 \cs_if_eq:NNTF\intertext@ \MT_intertext:
9 {
10 \tl_set:Nn \l__math_mathtools_init_tl {\MT_orig_intertext_false:}
11 }
12 {
13 \tl_set:Nn \l__math_mathtools_init_tl {\MT_orig_intertext_true:}
14 }

15 \cs_if_eq:NNTF\shortintertext@ \MT_shortintertext:n
16 {
17 \tl_put_right:Nn \l__math_mathtools_init_tl
18 {\MT_orig_shortintertext_false:}
19 }
20 {
21 \tl_put_right:Nn \l__math_mathtools_init_tl
22 {\MT_orig_shortintertext_true:}
23 }

24 \def\MT_intertext: {%
25 \def\intertext##1{%
26 \ifvmode\else\\\@empty\fi
27 \noalign{%
28 \penalty\postdisplaypenalty\vskip-\belowdisplayskip
29 \vskip-\lineskiplimit % CCS
30 \vskip\normallineskiplimit % CCS
31 \vskip\l_MT_above_intertext_sep
32 \vbox{%
```

Stop tagging when measuring:

```
33 \ifmeasuring@\tag_suspend:n{\measuring}\fi
34 \normalbaselines
35 \ifdim
36 \ifdim\@totalleftmargin=\z@
37 \linewidth
38 \else
39 -\maxdimen
40 \fi
41 =\columnwidth
42 \else \parshape\@ne \@totalleftmargin \linewidth
43 \fi
```

End the previous mc:

```
44 \tag_mc_end_push:
```

We are already in a par so we change now to Span:

```
45     \tagpdfsetup{para/tag=Span}
46     \noindent\ignorespaces##1\par
```

Restart the MC

```
47     \tag_mc_begin_pop:n{}}%
48     \penalty\predisplaypenalty\vskip\abovedisplayskip%
49     \vskip-\lineskiplimit      % CCS
50     \vskip\normallineskiplimit % CCS
51     \vskip\l_MT_below_intertext_sep
52   }%
53 }%
54 \MH_let:NwN \shortintertext \shortintertext@
55 }

56 \def\MT_orig_shortintertext:n #1{%
57   \ifmode\else\\\@empty\fi
58   \noalign{%
59     \penalty\postdisplaypenalty\vskip\abovedisplayshortskip
60     \vbox{%
61       \ifmeasuring@\tag_suspend:n{\measuring}\fi
62       \normalbaselines
63       \MH_if_dim:w
64       \MH_if_dim:w \@totalleftmargin=\z@
65       \linewidth
66       \MH_else:
67         -\maxdimen
68       \MH_fi:
69       =\columnwidth
70     \MH_else:
71     \parshape\@ne \@totalleftmargin \linewidth
72     \MH_fi:
73     \tag_mc_end_push:
74     \tagpdfsetup{para/tag=Span}
75     \tagpdfparaOn
76     \noindent\ignorespaces#1\par
77     \tag_mc_begin_pop:n{}}
78   \penalty\predisplaypenalty\vskip\abovedisplayshortskip%
79 }%
80 }

81 \def\MT_shortintertext:n #1{%
82   \ifmode\else\\\@empty\fi
83   \noalign{%
84     \penalty\postdisplaypenalty\vskip\abovedisplayshortskip
85     \vskip-\lineskiplimit
86     \vskip\normallineskiplimit
87     \vskip\l_MT_above_shortintertext_sep
88     \vbox{%
89       \ifmeasuring@\tag_suspend:n{\measuring}\fi
90       \normalbaselines
91       \MH_if_dim:w
92       \MH_if_dim:w \@totalleftmargin=\z@
```

```

93         \linewidth
94     \MH_else:
95         -\maxdimen
96     \MH_fi:
97     =\columnwidth
98 \MH_else:
99     \parshape\@ne \@totalleftmargin \linewidth
100 \MH_fi:
101 \tag_mc_end_push:
102 \tagpdfsetup{para/tag=P}

```

Why is it needed to enable paratagging??

```

103     \tagpdfparaOn
104     \noindent\ignorespaces#1\par
105     \tag_mc_begin_pop:n{}}%
106     \penalty\predisplaypenalty\vskip\abovedisplayshortskip%
107     \vskip-\lineskiplimit
108     \vskip\normallineskiplimit
109     \vskip\l_MT_below_shortintertext_sep
110 }%
111 }

```

see <https://github.com/latex3/tagging-project/issues/734>. The multlined environment still creates a few unneeded structure, perhaps triggered by empty tags.

```

112 \renewcommand*{\MT_mult_internal:n [1]{
113     \MH_if_boolean:nF {outer_mult}{\alignedspace@left} %<-- requires amsmath 2016/11/05
114     \MT_next:
115     \bgroup
116     \Let@
117     \def\l_MT_multline_lastline_fint{0 }
118     \chardef\dspbrk@context\@ne \restore@math@cr
119     \MH_let:NwN \math@cr_math\MT_mult_mathcr_atat:w
120     \MH_let:NwN \shoveleft\MT_shoveleft:wn
121     \MH_let:NwN \shoveright\MT_shoveright:wn
122     \spread@equation
123     \MH_set_boolean_F:n {mult_firstline}
124     \MT_measure_mult:n {#1}
125     \MH_if_dim:w \l_MT_multwidth_dim<\l_MT_multline_measure_fdim
126     \MH_setlength:dn \l_MT_multwidth_dim{\l_MT_multline_measure_fdim}
127     \fi
128     \MH_set_boolean_T:n {mult_firstline}
129     \MH_if_num:w \l_MT_multline_lastline_fint=\@ne
130     \MH_let:NwN \math@cr_math \MT_mult_firstandlast_mathcr:w
131     \MH_fi:
132     \ialign\bgroup
133     \hfil\strut@$\m@th\displaystyle{}}##
134     \UseTaggingSocket{math/luamml/save/nNn}{ {} \displaystyle {mtd}}
135     $
136     \UseTaggingSocket{math/luamml/mtable/finalizecol}{last}
137     \hfil
138     \crrc
139     \hfilneg
140     #1
141 }

```

end hook

```
142 \l__math_mathtools_init_tl
143 \ExplSyntaxOff

144 </kernel>
```

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