

# The latex-lab-mathtools code<sup>\*</sup>

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

<sup>1</sup> `\@@=math`

<sup>2</sup> `\*kernel`

### 2.1 File declaration

<sup>3</sup> `\ProvidesFile{latex-lab-mathtools.ltx}`

<sup>4</sup> `[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:

<sup>5</sup> `\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   \ifvmode\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   \ifvmode\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_firststandlast_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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