

The `latex-lab-mathtools` code^{*}

L^AT_EX 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   \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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