The `latex-lab-mathtools` code*

LaTeX Project

v0.80c 2025-06-18

Abstract

Contents

1 Introduction

This file implements adaptions 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 adaptions]
```

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

```
\ExplSyntaxOn
\tl_new:N\l__math_mathtools_init_tl
\cs_if_eq:NNTF\intertext@ \MT_intertext:
  {
    \tl_set:Nn \l__math_mathtools_init_tl {\MT_orig_intertext_false:}
  }
  {
    \tl_set:Nn \l__math_mathtools_init_tl {\MT_orig_intertext_true:}
  }

\cs_if_eq:NNTF\shortintertext@ \MT_shortintertext:n
  {
    \tl_put_right:Nn \l__math_mathtools_init_tl
      {\MT_orig_shortintertext_false:}
  }
  {
    \tl_put_right:Nn \l__math_mathtools_init_tl
      {\MT_orig_shortintertext_true:}
  }

\def\MT_intertext: {%
  \def\intertext##1{%
    \ifvmode\else\\\@empty\fi
    \noalign{%
      \penalty\postdisplaypenalty\vskip\belowdisplayskip
      \vskip-\lineskiplimit      % CCS
      \vskip\normallineskiplimit % CCS
      \vskip\l_MT_above_intertext_sep
       \vbox{%
```

Stop tagging when measuring:

```
      \ifmeasuring@\tag_suspend:n{\measuring}\fi
      \normalbaselines
        \ifdim
          \ifdim\@totalleftmargin=\z@
            \linewidth
          \else
            -\maxdimen
          \fi
         =\columnwidth
       \else \parshape\@ne \@totalleftmargin \linewidth
       \fi
```

End the previous mc:

```
       \tag_mc_end_push:
```

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

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

Restart the MC

```
        \tag_mc_begin_pop:n{}}%
      \penalty\predisplaypenalty\vskip\abovedisplayskip%
      \vskip-\lineskiplimit      % CCS
      \vskip\normallineskiplimit % CCS
      \vskip\l_MT_below_intertext_sep
   }%
 }%
 \MH_let:NwN \shortintertext \shortintertext@
}

\def\MT_orig_shortintertext:n #1{%
  \ifvmode\else\\\@empty\fi
  \noalign{%
    \penalty\postdisplaypenalty\vskip\abovedisplayshortskip
    \vbox{%
      \ifmeasuring@\tag_suspend:n{\measuring}\fi
      \normalbaselines
      \MH_if_dim:w
        \MH_if_dim:w \@totalleftmargin=\z@
          \linewidth
        \MH_else:
          -\maxdimen
        \MH_fi:
        =\columnwidth
      \MH_else:
        \parshape\@ne \@totalleftmargin \linewidth
      \MH_fi:
      \tag_mc_end_push:
      \tagpdfsetup{para/tag=Span}
      \tagpdfparaOn
      \noindent\ignorespaces#1\par
      \tag_mc_begin_pop:n{}}
    \penalty\predisplaypenalty\vskip\abovedisplayshortskip%
  }%
}

\def\MT_shortintertext:n #1{%
  \ifvmode\else\\\@empty\fi
  \noalign{%
    \penalty\postdisplaypenalty\vskip\abovedisplayshortskip
    \vskip-\lineskiplimit
    \vskip\normallineskiplimit
    \vskip\l_MT_above_shortintertext_sep
    \vbox{%
    \ifmeasuring@\tag_suspend:n{\measuring}\fi
    \normalbaselines
      \MH_if_dim:w
        \MH_if_dim:w \@totalleftmargin=\z@
```

```
          \linewidth
        \MH_else:
          -\maxdimen
        \MH_fi:
        =\columnwidth
      \MH_else:
        \parshape\@ne \@totalleftmargin \linewidth
      \MH_fi:
      \tag_mc_end_push:
      \tagpdfsetup{para/tag=P}
```

Why is it needed to enable paratagging??

```
      \tagpdfparaOn
      \noindent\ignorespaces#1\par
      \tag_mc_begin_pop:n{}}%
    \penalty\predisplaypenalty\vskip\abovedisplayshortskip%
    \vskip-\lineskiplimit
    \vskip\normallineskiplimit
    \vskip\l_MT_below_shortintertext_sep
  }%
}
```

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

```
    \renewcommand*\MT_mult_internal:n [1]{
     \MH_if_boolean:nF {outer_mult}{\alignedspace@left} %<-- requires amsmath 2016/11/05
      \MT_next:
      \bgroup
        \Let@
        \def\l_MT_multline_lastline_fint{0 }
        \chardef\dspbrk@context\@ne \restore@math@cr
        \MH_let:NwN \math@cr__math\MT_mult_mathcr_atat:w
        \MH_let:NwN \shoveleft\MT_shoveleft:wn
        \MH_let:NwN \shoveright\MT_shoveright:wn
        \spread@equation
        \MH_set_boolean_F:n {mult_firstline}
        \MT_measure_mult:n {#1}
        \MH_if_dim:w \l_MT_multwidth_dim<\l_MT_multline_measure_fdim
          \MH_setlength:dn \l_MT_multwidth_dim{\l_MT_multline_measure_fdim}
        \fi
        \MH_set_boolean_T:n {mult_firstline}
        \MH_if_num:w \l_MT_multline_lastline_fint=\@ne
          \MH_let:NwN \math@cr__math \MT_mult_firstandlast_mathcr:w
        \MH_fi:
        \ialign\bgroup
          \hfil\strut@$\m@th\displaystyle{}##
          \UseTaggingSocket{math/luamml/save/nNn}{ {} \displaystyle {mtd}}
          $
          \UseTaggingSocket{math/luamml/mtable/finalizecol}{last}
          \hfil
          \crcr
          \hfilneg
          #1
    }
```

end hook

```
  \l__math_mathtools_init_tl
\ExplSyntaxOff
```

⟨/kernel⟩

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