

The L^AT_EX macro package `tmmaths`

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1 Description

The L^AT_EX macro package `tmmaths` supports typesetting with the font families ‘Times’ and ‘TM-Math’. Loading the package

```
\usepackage{tmmaths}
```

effects the following:

- The default font family for typesetting text will be `ptm`, i.e. Adobe Times. These fonts are available in OT1 (traditional) as well as in T1 (european) and TS1 (text companion symbols) encoding.
- The MicroPress TM-Math fonts will be used for typesetting math.

- A new mathematical alphabet `\mathbold` provides bold slanted letters, including Greek.

1.1 Font encoding

The package does *not* change the default output font encoding from OT1. It is, however, recommended to make use of Adobe Times through the extended T1 and TS1 encodings, so as to provide access all glyphs. This is enabled by the following additional commands:

```
\usepackage[T1]{fontenc}
\usepackage{textcomp}
```

2 Package options

2.1 The option `tir`

This option makes `tir` (i. e. the TM-Math text fonts) the default text font family instead of `ptm`. As a result, none of the font definition files, metrics and virtual fonts from the PSNFSS distribution are required; you will need the files from MicroPress' TM-Math distribution only. The real Type 1 fonts of Adobe Times are still needed to print or display a document; this option changes only the way they are accessed in text mode. Please, note the following potential problems:

- The font family `tir` is *not* available with T1 and TS1 encoding. The default text font encoding must *not* be changed from OT1, when the option `tir` is used.
- The font family `tir` does not provide a *slanted* font shape. (There is, of course, an *italic* one!)
- Usage of `tir` in place of `ptm` may result in slightly different formatting.

2.2 The option `slantedGreek`

When the macro package is loaded using this option, uppercase Greek letters will, by default, be slanted. Regardless of the option the new commands `\upDelta` and `\upOmega` will *always* provide an upright Δ and Ω .

3 Known bugs and deficiencies

Oldstyle numerals in Times style are supported with the L^AT_EX release from December 1998 or a later one only.

4 Availability and support

The latest version of this package can be obtained from the directory `macros/latex/contrib/supported/tmmath/` of any CTAN host, e.g. `<ftp://dante.ctan.org/tex-archive/>`.

The TM-Math fonts are provided by

MicroPress, Inc.
6830 Harrow Street
Forest Hills NY 11375
USA
`<http://www.micropress-inc.com>`.

Please, address questions or bug reports via email to

`<support@micropress-inc.com>`.

5 The code

5.1 Options processing

We set up flags to memorize the selected options:

```
1 \package
2 \newif\iftm@tir
3 \newif\iftm@slantedGreek
```

Now we can declare and process the particular options. Note that processing an option will only set the particular flag.

```
4 \DeclareOption{tir}{\tm@tirtrue}
5 \DeclareOption{slantedGreek}{\tm@slantedGreektrue}
6 \ProcessOptions\relax
```

5.2 OML support for Adobe Times

OML/ptm is usually mapped to OML/cmr. When the TM-Math fonts are available, they should be used instead, so as to support oldstyle numerals with Adobe Times, too. This can be omitted, when the option `tir` is selected.

```
7 \iftm@tir\else
8 \DeclareFontFamily{OML}{ptm}{\skewchar\font127}
9 \DeclareFontShape{OML}{ptm}{m}{n}
10  {<-> ssub * mtm/m/it}{-}
11 \DeclareFontShape{OML}{ptm}{m}{it}
12  {<-> ssub * mtm/m/it}{-}
13 \DeclareFontShape{OML}{ptm}{m}{sl}
14  {<-> ssub * mtm/m/it}{-}
15 \DeclareFontShape{OML}{ptm}{m}{sc}
16  {<-> ssub * mtm/m/it}{-}
```

```

17 \DeclareFontShape{OML}{ptm}{b}{n}
18   {<-> ssub * mtm/b/it}{}
19 \DeclareFontShape{OML}{ptm}{b}{it}
20   {<-> ssub * mtm/b/it}{}
21 \DeclareFontShape{OML}{ptm}{b}{sl}
22   {<-> ssub * mtm/b/it}{}
23 \DeclareFontShape{OML}{ptm}{b}{sc}
24   {<-> ssub * mtm/b/it}{}
25 \DeclareFontShape{OML}{ptm}{bx}{n}
26   {<-> ssub * mtm/b/it}{}
27 \DeclareFontShape{OML}{ptm}{bx}{it}
28   {<-> ssub * mtm/b/it}{}
29 \DeclareFontShape{OML}{ptm}{bx}{sl}
30   {<-> ssub * mtm/b/it}{}
31 \DeclareFontShape{OML}{ptm}{bx}{sc}
32   {<-> ssub * mtm/b/it}{}
33 \fi

```

5.3 Setting up the text fonts

```

34 \iftm@tir
35   \DeclareFontSubstitution{OT1}{tir}{m}{n}
36   \renewcommand{\rmdefault}{tir}
37 \else
38   \renewcommand{\rmdefault}{ptm}
39 \fi

```

5.4 Setting up the math fonts

```

40 \DeclareSymbolFont{operators}{OT1}{tir}{m}{n}%
41 \DeclareSymbolFont{letters}{OML}{mtm}{m}{it}%
42 \DeclareSymbolFont{symbols}{OMS}{mtsy}{m}{n}%
43 \DeclareSymbolFont{largesymbols}{OMX}{mtex}{m}{n}%
44 \SetSymbolFont{operators}{bold}{OT1}{tir}{bx}{n}%
45 \SetSymbolFont{letters}{bold}{OML}{mtm}{b}{it}%
46 \SetSymbolFont{symbols}{bold}{OMS}{mtsy}{b}{n}%
47 \DeclareMathAlphabet{\mathbf}{OT1}{tir}{bx}{n}%
48 \DeclareMathAlphabet{\mathit}{OT1}{tir}{m}{it}%
49 \SetMathAlphabet\mathit{bold}{OT1}{tir}{bx}{it}%

```

Make `\hbar` work:

```
50 \def\hbar{{\mskip2mu\mathchar'26\mkern-7.8mu}}
```

Define `\mathbold`

```
51 \DeclareMathAlphabet{\mathbold}{OML}{mtm}{b}{it}
```

Make `\mathbold` act on lowercase Greek, too:

```

52 \DeclareMathSymbol{\alpha}{\mathalpha}{letters}{11}
53 \DeclareMathSymbol{\beta}{\mathalpha}{letters}{12}
54 \DeclareMathSymbol{\gamma}{\mathalpha}{letters}{13}
55 \DeclareMathSymbol{\delta}{\mathalpha}{letters}{14}
56 \DeclareMathSymbol{\epsilon}{\mathalpha}{letters}{15}

```

```

57 \DeclareMathSymbol{\zeta}{\mathalpha}{letters}{16}
58 \DeclareMathSymbol{\eta}{\mathalpha}{letters}{17}
59 \DeclareMathSymbol{\theta}{\mathalpha}{letters}{18}
60 \DeclareMathSymbol{\iota}{\mathalpha}{letters}{19}
61 \DeclareMathSymbol{\kappa}{\mathalpha}{letters}{20}
62 \DeclareMathSymbol{\lambda}{\mathalpha}{letters}{21}
63 \DeclareMathSymbol{\mu}{\mathalpha}{letters}{22}
64 \DeclareMathSymbol{\nu}{\mathalpha}{letters}{23}
65 \DeclareMathSymbol{\xi}{\mathalpha}{letters}{24}
66 \DeclareMathSymbol{\pi}{\mathalpha}{letters}{25}
67 \DeclareMathSymbol{\rho}{\mathalpha}{letters}{26}
68 \DeclareMathSymbol{\sigma}{\mathalpha}{letters}{27}
69 \DeclareMathSymbol{\tau}{\mathalpha}{letters}{28}
70 \DeclareMathSymbol{\upsilon}{\mathalpha}{letters}{29}
71 \DeclareMathSymbol{\phi}{\mathalpha}{letters}{30}
72 \DeclareMathSymbol{\chi}{\mathalpha}{letters}{31}
73 \DeclareMathSymbol{\psi}{\mathalpha}{letters}{32}
74 \DeclareMathSymbol{\omega}{\mathalpha}{letters}{33}
75 \DeclareMathSymbol{\varepsilon}{\mathalpha}{letters}{34}
76 \DeclareMathSymbol{\vartheta}{\mathalpha}{letters}{35}
77 \DeclareMathSymbol{\varpi}{\mathalpha}{letters}{36}
78 \DeclareMathSymbol{\varphi}{\mathalpha}{letters}{39}
79 \DeclareMathSymbol{\varrho}{\mathalpha}{letters}{37}
80 \DeclareMathSymbol{\varsigma}{\mathalpha}{letters}{38}

```

The option `slantedGreek`:

```

81 \let\upOmega\Omega
82 \let\upDelta\Delta
83 \ifTM@slantedGreek
84 \DeclareMathSymbol{\Gamma}{\mathalpha}{letters}{0}
85 \DeclareMathSymbol{\Delta}{\mathalpha}{letters}{1}
86 \DeclareMathSymbol{\Theta}{\mathalpha}{letters}{2}
87 \DeclareMathSymbol{\Lambda}{\mathalpha}{letters}{3}
88 \DeclareMathSymbol{\Xi}{\mathalpha}{letters}{4}
89 \DeclareMathSymbol{\Pi}{\mathalpha}{letters}{5}
90 \DeclareMathSymbol{\Sigma}{\mathalpha}{letters}{6}
91 \DeclareMathSymbol{\Upsilon}{\mathalpha}{letters}{7}
92 \DeclareMathSymbol{\Phi}{\mathalpha}{letters}{8}
93 \DeclareMathSymbol{\Psi}{\mathalpha}{letters}{9}
94 \DeclareMathSymbol{\Omega}{\mathalpha}{letters}{10}
95 \fi

```

5.5 Peaceful coexistence with the AMS packages

Do not let the `amsfonts` package redefine `\hbar`:

```

96 \let\TM@hbar\hbar
97 \AtBeginDocument{\ifpackageloaded{amsfonts}{\let\hbar\TM@hbar}{}}

```

Fix multiple integrals from `amsmath` for use with TM-Math fonts:

```

98 \ifpackageloaded{amsmath}{%
99 \def\intkern@{\mkern-6mu}

```

```

100 \def\ints@#1{%
101   \mkern-7mu%\mathchoice{\mkern-2mu}{-}{-}{-}%
102   \mathop{\mkern7mu
103     \intop\ifnum#1=\z@\intdots@
104     \else\intkern@\fi
105     \ifnum#1>\tw@\intop\intkern@\fi
106     \ifnum#1>\thr@@\intop\intkern@\fi
107     \intop
108   }\ilimits@
109 }
110 }{}
111 }

```

5.6 Initialization

Finally, change the current font to ‘Times’:

```

112 \normalfont
113 </package>

```

DocStrip modules in this file tmmaths.dtx

```

module:  contents:
package package tmmaths
driver  driver for documentation

```

The next line of code prevents DocStrip from adding the character table to the modules:

```

114 \endinput

```

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