The **mathcomp** package for using Text Companion fonts in math mode *

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1 Purpose

It always bothered me that I had to write the unit 'μm' with an italic 'μ'. There is a 'μ' in the Text Companion (TC) fonts, and it's available in most of the font families, shapes and series. The **textcomp** package provides access to the TC fonts from LaTeX 2_ε. But I wanted to use some of these fonts in math mode, so I decided to write a package to achieve this goal.

Most of the characters don't make sense in math mode or they are already present in the standard math fonts. The useful ones are:

`$\tcohm$`	Ω	`$\tcperthousand$`	‰
`$\tccelsius$`	℃	`$\tcpertenthousand$`	‰₀
`$\tcmu$`	µ	`$\tcdegree$`	°
`$\tcdigitoldstyle{0}$`	0 …	`$\tcdigitoldstyle{9}$`	9

The names for the symbols are the same as in the **textcomp** package except that you have to type `\tc`*symbol-name* instead of `\text`*symbol-name*. The oldstyle digits are defined in a different way, see section 2. `\tccelsius` is also available with the name `\tccentigrade`, for the sake of compatibility with earlier versions of the **textcomp** and **mathcomp** packages.

Additionally, the **mathcomp** package will redefine the macros `\dagger` and `\ddagger` so as to take their symbols from the text companion fonts, thus also making sure that the symbols produced by `\fnsymbol` will always match the text font family.

The extra math symbols are made available for math versions 'normal' and 'bold', provided that a 'bold' math version is actually defined.

The default behaviour of the **mathcomp** package is to use the text companion fonts from the font family CM Roman. Any other text font family can be specified as a package option; e.g., say `\usepackage[ppl]{mathcomp}` to make **mathcomp** use the Adobe Palatino (`ppl`) text companion fonts. The option `rmdefault` is special: It makes the **mathcomp** package load the particular font family which has been

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*Preliminary version v0.1f

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chosen as the default roman font family (\rmdefault) for the document, whatever it is.

The package is based on the textcomp package[1] by Sebastian Rahtz. This package is required because I didn't want to declare the font encoding TS1 once again.

The mathcomp package is preliminary because both the TS1 encoding and the textcomp package might change in the future.

2 The code

The code is quite simple, short and obvious so there is not much to say. The package is announced (but not too loudly).

```
1 \NeedsTeXFormat{LaTeX2e}[1995/12/01]
2 \ProvidesPackage{mathcomp}[\filedate\space\fileversion\space(TBo)]
```

The textcomp package is loaded to define the TS1 encoding.

```
3 \RequirePackage{textcomp}
```

The new symbol font TS1/cmr/m/n is declared under the name TC. It is the default font for all math versions. For the math version 'bold' TS1/cmr/bx/n is defined if bold math is available[2].

```
4 \DeclareSymbolFont{TC}{TS1}{cmr}{m}{n}
5 \ifx\mv@bold\@undefined\else
6   \SetSymbolFont{TC}{bold}{TS1}{cmr}{bx}{n}
7 \fi
```

The package option rmdefault overwrites these declarations with the document's roman font family.

```
8 \DeclareOption{rmdefault}{
9 \DeclareSymbolFont{TC}{TS1}{\rmdefault}{m}{n}
10 \ifx\mv@bold\@undefined\else
11   \SetSymbolFont{TC}{bold}{TS1}{\rmdefault}{bx}{n}
12 \fi
13 }
```

Any other package option overwrites the font declarations with the font family given.

```
14 \DeclareOption*{
15 \DeclareSymbolFont{TC}{TS1}{\CurrentOption}{m}{n}
16 \ifx\mv@bold\@undefined\else
17   \SetSymbolFont{TC}{bold}{TS1}{\CurrentOption}{bx}{n}
18 \fi
19 }
```

The symbol alphabet for the oldstyle digits is declared:

```
20 \DeclareSymbolFontAlphabet{\tcdigitoldstyle}{TC}
```

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[1] Ver. 1.4, 1995/12/11

[2] Thanks to Walter Schmidt for this fix and the other improvements in version 0.1f.

Finally, the extra symbols[3] are defined.

```
21 \DeclareMathSymbol{\tcohm}{\mathord}{TC}{'127}
22 \DeclareMathSymbol{\tcperthousand}{\mathord}{TC}{'207}
23 \DeclareMathSymbol{\tccelsius}{\mathord}{TC}{'211}
24 \let\tccentigrade=\tccelsius
25 \DeclareMathSymbol{\tcdegree}{\mathord}{TC}{176}
26 \DeclareMathSymbol{\tcpertenthousand}{\mathord}{TC}{'230}
27 \DeclareMathSymbol{\tcmu}{\mathord}{TC}{'265}
28 \DeclareMathSymbol{\dagger}{\mathbin}{TC}{132}
29 \DeclareMathSymbol{\ddagger}{\mathbin}{TC}{133}
30
```

And the package options are processed.

```
31 \ProcessOptions
```

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[3]Thanks to D. Arsenau who found the error that was corrected in version 0.1e.