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 2ε**. 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:

\begin{verbatim}
\$tcohm$  \quad  \Omega  \quad  \$tcperthousand$  \quad  \%o
\$tccelsius$  \quad  °C  \quad  \$tcpertenthousand$  \quad  \%oo
\$tcmu$  \quad  µ  \quad  \$tcdegree$  \quad  °
\$tcdigitoldstyle{0}$  \quad  0  \ldots  \quad  \$tcdigitoldstyle{9}$  \quad  9
\end{verbatim}

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

Additionally, the **mathcomp** package will redefine the macros \texttt{\dagger} and \texttt{\ddagger} so as to take their symbols from the text companion fonts, thus also making sure that the symbols produced by \texttt{fn\symbol} 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 \texttt{usepackage[ppl]{mathcomp}} to make **mathcomp** use the Adobe Palatino (ppl) text companion fonts. The option \texttt{rmdefault} is special: It makes the **mathcomp** package load the particular font family which has been

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

The package is based on the \texttt{textcomp} package\textsuperscript{1} by Sebastian Rahtz. This package
is required because I didn’t want to declare the font encoding TS1 once again.

The \texttt{mathcomp} package is preliminary because both the TS1 encoding and the
\texttt{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).

\begin{verbatim}
\NeedsTeXFormat{LaTeX2e}[1995/12/01]
\ProvidesPackage{mathcomp}[\filedate\space\fileversion\space(TBo)]
\RequirePackage{textcomp}
\end{verbatim}

The \texttt{textcomp} package is loaded to define the \texttt{TS1} encoding.

\begin{verbatim}
\DeclareSymbolFont{TC}{TS1}{cmr}{m}{n}
\ifx\mv@bold\@undefined\else
\SetSymbolFont{TC}{bold}{TS1}{cmr}{bx}{n}\fi
\end{verbatim}

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\textsuperscript{2}.

\begin{verbatim}
\DeclareSymbolFont{TC}{TS1}{cmr}{m}{n}
\ifx\mv@bold\@undefined\else
\SetSymbolFont{TC}{bold}{TS1}{cmr}{bx}{n}\fi
\end{verbatim}

The package option \texttt{rmdefault} overwrites these declarations with the document’s
roman font family.

\begin{verbatim}
\DeclareOption{rmdefault}{
\DeclareSymbolFont{TC}{TS1}{\rmdefault}{m}{n}
\ifx\mv@bold\@undefined\else
\SetSymbolFont{TC}{bold}{TS1}{\rmdefault}{bx}{n}\fi}
\end{verbatim}

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

\begin{verbatim}
\DeclareOption*{\Declaresymbolfont{TC}{TS1}{\CurrentOption}{m}{n}
\ifx\mv@bold\@undefined\else
\SetSymbolFont{TC}{bold}{TS1}{\CurrentOption}{bx}{n}\fi}
\end{verbatim}

The symbol alphabet for the oldstyle digits is declared:

\begin{verbatim}
\DeclareSymbolFontAlphabet{\tcdigitoldstyle}{TC}
\end{verbatim}

\textsuperscript{1}Ver. 1.4, 1995/12/11
\textsuperscript{2}Thanks to Walter Schmidt for this fix and the other improvements in version 0.1f.
Finally, the extra symbols\(^3\) are defined.

\begin{verbatim}
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{\tcperthousand}{\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
\end{verbatim}

\(^3\)Thanks to D. Arsenau who found the error that was corrected in version 0.1e.