The `eufrak` package

Frank Mittelbach   Rainer Schöpf
Michael Downes
Revised by David M. Jones

Version 3.00, 2009/06/22

1   Introduction

This package was written originally by Frank Mittelbach and Rainer Schöpf; later it was moved into the AMS-LaTeX distribution with only minor modifications. It is now part of the AMSFonts distribution; it can be used with LaTeX 2_ε with no dependency on the `amsmath` package.

This file sets up some font shape definitions to use the Euler Fraktur symbols in math mode. These fonts are part of the AMSFonts collection which can be found on many TeX servers. It is also directly available from the AMS and from TeX user groups.

`\EuFrak`   To access the Euler Fraktur alphabet a ⟨*math alphabet identifier*⟩ called `\mathfrak` is provided. For example, the input

```
 \[ \mathfrak{A} \neq \mathcal{A} \]
```

will produce

$$\mathfrak{A} \neq \mathcal{A}$$

Here is a complete table of the beautiful letters drawn by Hermann Zapf:

$$\mathfrak{A}\ \mathfrak{B}\ \mathfrak{C}\ \mathfrak{D}\ \mathfrak{E}\ \mathfrak{F}\ \mathfrak{G}\ \mathfrak{H}\ \mathfrak{I}$$
$$\mathfrak{J}\ \mathfrak{K}\ \mathfrak{L}\ \mathfrak{M}\ \mathfrak{N}\ \mathfrak{O}\ \mathfrak{P}\ \mathfrak{Q}\ \mathfrak{R}$$
$$\mathfrak{S}\ \mathfrak{T}\ \mathfrak{U}\ \mathfrak{V}\ \mathfrak{W}\ \mathfrak{X}\ \mathfrak{Y}\ \mathfrak{Z}$$

2   The Implementation

```
\NeedsTeXFormat{LaTeX2e}% LaTeX 2.09 can't be used (nor non-LaTeX)
[1994/12/01]% LaTeX date must be December 1994 or later
```

If the `amsfonts` package is already loaded, it doesn't really make sense to load `eufrak` as well.

```
\@ifpackageloaded{amsfonts}{%
  \PackageWarning{eufrak}{The eufrak package is redundant if the
    amsfonts package is used}%
  \def\EuFrak{\mathfrak}% for bulletproofing
  \endinput
}{}%
```

```
\ProvidesPackage{eufrak}[2009/06/22 v3.00 Euler Fraktur fonts]
```

\EuFrak   Now we define the ⟨*math alphabet identifier*⟩ \EuFrak for both the normal and
the bold math version

```
\DeclareMathAlphabet\EuFrak{U}{euf}{m}{n}
\SetMathAlphabet\EuFrak{bold}{U}{euf}{b}{n}
```

See the amsfonts package documentation for a discussion of the obsolescence
of the psamfonts option.

```
\DeclareOption{psamsfonts}{}
```

Here is a table describing the action of the eucal, euscript, and eufrak
packages.

Package	Option	Commands provided
eucal	none	\mathcal
eucal	[mathcal]	\mathcal
eucal	[mathscr]	\mathscr (\mathcal unchanged)
euscript	none	\EuScript (obsolete)
euscript	[mathcal]	\mathcal
eufrak	none	\mathfrak (also obsolete \EuFrak for compatibility)

The preferred command name is \mathfrak, which for now just calls the old
command name \EuFrak.

```
\newcommand{\mathfrak}{\EuFrak}
```

Process the package options.

```
\ProcessOptions
```

The usual \endinput to ensure that random garbage at the end of the file
doesn't get copied by docstrip.

```
\endinput
```