

The LaTeX macro package hvmaths

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1 The HV-Math font set

MicroPress' HV-Math font set extends the Adobe Helvetica fonts:

- Additional text and text companion symbols make the full OT1 and T1 character sets and a subset of the text companion symbols available, including the Euro sign. With LaTeX, the enhanced Helvetica typefaces are provided as a font family named hvr.
- Several math fonts, matching the 'Helvetica' style, are provided to support all of TeX's math typesetting capabilities and fully replace the default Computer Modern fonts.

2 The macro package hvmaths

Loading the package

```
\usepackage{hvmaths}
```

effects the following:

- The default sans serif font family for typesetting text is changed to hvr, i. e. Micropress HV-Math.
- The sans serif font family will be the default for the whole document.
- The matching MicroPress HV-Math fonts will be used in formulas.

Using the hvmaths package requires also the package keyval, which is part of the GRAPHICS bundle and should be available in any decent LaTeX system.

2.1 Font encoding

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

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

2.2 Using the AMS math symbol fonts

The HV-Math font set includes matching AMS symbol fonts, too. LaTeX will use these, if the package `amssymb` is loaded in conjunction with `hvmaths`. The sequence of loading does not matter.

2.3 Bold italic letters in formulas

The `hvmaths` package provides a *bold italic* math alphabet `\mathbold`. It includes both Latin and Greek. (Do not mix this up with `\mathbf`, which implements the **bold upright** text font for use in math!)

2.4 Upright Greek letters

A full upright Greek alphabet is made available. The macros `\upalpha`, `\upbeta` ... `\upGamma`, `\upDelta` etc. always produce upright Greek letters, regardless of the `slantedGreek` option described below,

2.5 Options

The behavior of the package, as described above, can be modified by various options:

2.5.1 The option `sans`

Loading the package with this option will only change the sans serif text font family to Helvetica. The default font family and the math fonts are untouched. Thus, the `hvmaths` package will behave like the PSNFSS package `helvet`.

Using both `sans` and `roman` does not make sense, of course, and the `sans` option is ignored then.

2.5.2 The option `roman`

This option will cause HV-Math to be mapped to the default ‘roman’ font family instead of the ‘sans serif’ one. This is provided for compatibility with the package `hvmath` only and should normally not be used.

2.5.3 The option `scaled`

Helvetica is noticeably larger than most other fonts (incl. CM), when used with the same nominal size. As a result, it may become difficult to mix fonts or add further math alphabets. This can be fixed by loading the `hvmaths` package with the option `[scaled=scale]`, e.g.:

```
\usepackage[scaled=.92]{hvmaths}
```

This will load the font family `hvr` (Helvetica) for sans-serif, scaled down to 92% of its ‘natural’ size, which blends well with Adobe Times.

The `<scale>` can be omitted:

```
\usepackage[scaled]{hvmaths}
```

A default scaling of 0.95 will be assumed then, which makes the height of the Helvetica capitals comply with many other typeface families.

As a side effect, the default line spacing of the standard LaTeX document classes may be sufficient for the now scaled-down Helvetica, especially when the line width is not too large.

2.5.4 The option `slantedGreek`

When the macro package is loaded using the option `[slantedGreek]`, uppercase Greek letters in math will, by default, be slanted.

2.6 Changes over `hvmath.sty`

As compared with MicroPress' original `hvmath.sty`, this package provides a number of improvements:

- the option `slantedGreek`
- support for a full upright Greek alphabet, without loading any additional package
- AMS symbols can be used by just loading the package `amssymb`; no extra packages are needed, and the sequence of loading does not matter.

In contrast to `hvmath`, the package does *not* support MicroPress' 'local' font encoding LV1.

3 Availability and support

The latest version of this package can be obtained from the directory

```
macros/latex/contrib/psnfssx/hvmath
```

of any CTAN host.

The HV-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>.
```

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