

# ebgaramond-maths\*

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30<sup>th</sup> November, 2014

## Abstract

ebgaramond-maths provides some  $\LaTeX$  support for the use of EBGaramond12 in mathematics. It requires ebgaramond and uses the postscript fonts provided by that package<sup>‡</sup>. The package essentially consists of the files generated by an answer to a question at <http://tex.stackexchange.com/q/152038/> and is a response to a follow-up request by the author of that question.

## 1 Introduction

There is not really much to document. To use EBGaramond in mathematics, you just load the package:

```
\usepackage[cmintegrals,cmbraces]{newtxmath}
\usepackage{ebgaramond-maths}
```

Note that this will also load ebgaramond which will set your default serif font to EBGaramond12. If for any reason you do not want this, note two things. First, your document will be a typographic abomination. Second, you can easily create the abomination of your choice by changing the default serif family *after* loading ebgaramond-maths.

## 2 Details

The package includes `.tfm` and `.map` files which define EBGaramond-Maths, a new  $\TeX$  font for  $\LaTeX$ . This font uses EBGaramond12-Italic with an OML encoding. However, not all characters in this encoding are available (see table 1 on the following page). Note that this is a limitation of the font itself and not of this package.

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\*Version 1.1 2014-11-30.

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<sup>‡</sup>This version corresponds to the 2014-07-07 version of ebgaramond.

<code>\leftharpoonup</code>	<code>\triangleright</code>	<code>\flat</code>	<code>\smile</code>
<code>\leftharpoondown</code>	<code>\triangleleft</code>	<code>\natural</code>	<code>\frown</code>
<code>\rightharpoonup</code>	<code>\star</code>	<code>\sharp</code>	<code>\vec</code>
<code>\rightharpoondown</code>	<code>\partial</code>		<code>\t</code>

Table 1: Symbols missing from EBGaramond12

`ebgaramond-maths` uses this new font together with support files from `ebgaramond` to set up support for mathematics as follows:

- EBGaramond-Maths (medium weight) is used for `letters` (standard and bold);
- EBGaramond-LF (medium weight, upright shape) is used for `operators` (standard and bold);
- EBGaramond-LF (medium weight, swash shape) is used for the calligraphic alphabet, `\mathcal` (medium weight);
- `\mathrm`, `\mathbf` and `\mathit` should work as expected and use EBGaramond-LF (medium weight, upright or italic shape as appropriate).

Note that EBGaramond12 does not include a bold weight by design. Following the designer’s intentions, this package, like `ebgaramond`, substitutes the medium weight for bold where required.

### 3 Method

If you just wish to use the package, you do not need to read this section. It explains how to create the font support files used by the package given that you have `ebgaramond` installed. It assumes that you are using TeX Live on GNU/Linux or another Unix-like system such as OS X.

#### 3.1 Variables

Make a working directory somewhere which I’ll call `{work}`. The only requirement is that you have permission to write there and a (very small) amount of space. (It goes without saying that this should not be done as root.)

In the instructions which follow `{texmain}` is your main, current `texmf` directory. On my system, that’s `/usr/local/texlive/YYYY` (where YYYY is the latest version of TeX Live installed) or `/usr/local/texlive/current`.

### 3.2 Working environment

Change to `work`. From now on, I assume that all commands are executed in this directory and that all created files are saved there.

Create the following symbolic links in your working directory:

```
ln -s ${texmain}/texmf-dist/tex/fontinst/mathetx/oml.etx \
    ${texmain}/texmf-dist/fonts/opentype/public/ebgaramond/\
    EBGaramond12-Italic.otf ./
```

### 3.3 Create a preliminary encoding file

This is not the encoding file  $\TeX$  needs but it will form the basis for that file.

First, run `fontinst` in interactive mode. (That is, just type `fontinst` at the command.) At the prompt:

```
\input finstmsc.sty
\etxtoenc{oml}{oml-ebgaramond}
\bye
```

This will produce `oml-ebgaramond.enc` which should be lightly modified before feeding to `otftotfm`:

```
sed -i -e 's/TeXMathItalicEncoding/\
    EBGaramondTeXMathItalicEncoding/g' \
    -e 's/oldstyle//' oml-ebgaramond.enc
```

This ensures that the encoding has a distinctive (and hopefully unique) name.

### 3.4 Generate the $\TeX$ font

`ebgaramond` already provides the `type1` files needed so there is no need to regenerate those. All that is required is to generate a suitable `.tfm`:

```
otftotfm -e oml-ebgaramond.enc EBGaramond12-Italic.otf \
    > EBGaramond-Maths.map
```

This will create both the `.tfm` file and the `.map` file fragment  $\TeX$  needs to use the font. It will also create a new encoding file with what will almost certainly be a very weird name. This is the encoding file  $\TeX$  will use, as specified in the `.map` file fragment. The temporary encoding `oml-ebgaramond.enc` can now be deleted as it is no longer required.