Fourier-GUT*enberg*

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1 What is Fourier-GUT*enberg*?

Fourier-GUT*enberg* is a LaTeX typesetting system wich uses Adobe Utopia as its standard base font. Adobe Utopia has been choosen for several reasons. The main of them is that four typefaces from the Utopia fonts packages have been gracefully donated to the X-consortium by Adobe. These typefaces (Utopia Regular, Utopia Italic, Utopia Bold, Utopia Bold Italic) are free of charges, and freely distributable (but it is *not* free software: see the licence in the read-me file!).

Shortly, here are the main features of Fourier-GUT*enberg*:

- Fourier-GUT*enberg* provides all complementary typefaces needed to allow Utopia based TeX typesetting. The system is absolutely stand-alone: apart from Utopia and fourier, no other typefaces are required.
- Fourier-GUT*enberg* provides two greeks, slanted and upright, that may be used in the same document.
- It make it possible to typeset "à la française": upright roman uppercases, and upright greek in math mode.
- Fourier-GUT*enberg* do not use OT1 encoding at all. As in standard LaTeX greek uppercases are in the text OT1 font, maths encodings have been redefined.
- It is *fully* T1 encoded: text symbols like "dottlessj" (ȷ, **ȷ**) or "eng" (ŋ, Ŋ) are provided through a virtual fonts mechanism.
- Optionnaly, the commercial Adobe expert complement may be fully used by fourier. It includes old-style digits, real (not faked) small caps, semi-bold, extra-black, etc. It may be usefull for professionnal typesetting, but of course, you have to buy the fonts!
- The `\boldmath` command is not still fully implemented, *but* there are now bold versions of math letters fonts, which can be used with the `\bm` command (package `bm.sty` which *must* be called after `fourier.sty`): $\boldsymbol{\alpha x + \beta y}$.

☞ Fourier-GUT*enberg* provides specific symbols, in math mode ($[\![,]\!]$, $\fint$) and in text mode (€, ∈, ☙).

☞ There is a new package provided with Fourier-GUT*enberg*: `fourier-orns`. This is for those who want only the Fourier-GUT*enberg* logos & decos, but not the Fourier-GUT*enberg* fonts. *Please don't call it if you call* `fourier`.

2 Usage

2.1 Calling Fourier-GUT*enberg*

You call Fourier-GUT*enberg* with:

```
\usepackage[<options>]{fourier}
```

The options are:

1. `sloped` (default): in maths, lowercase greek is slanted, uppercase greek is upright, roman uppercase are slanted.

$$M \in \Gamma \iff OM = x\rho$$

2. `upright` (à la french): in maths, lowercase and uppercase greeks are upright, and so is roman uppercase.

$$\mathrm{M} \in \Gamma \iff \mathrm{OM} = x\rho$$

3. `widespace`: this option offers a larger interword space to those who think that the standard space of Utopia is too narrow...

4. `expert`, `oldstyle`, `fulloldstyle`: in order to use these options you need the commercial complements of Utopia. The `expert` option provides small caps (not faked), semi-bold, extra-black, (see the commands below) and more symbols in the TS1 companion encoding. The `oldstyle` option is the same, with oldstyle digits in text mode, and the `fulloldstyle` option is the same with oldstyle digits in text mode and in math mode.

   ☞ (new in Fourier-GUT*enberg* 2.0) With `expert`, `oldstyle` or `fulloldstyle` options, you get the `\superieures` new command, which permits to use the superior letters of the (commercial) expert font if those letters exsists. You also get a new `sci` font shape (`\fontshape{sci}\selectfont`) and the two associated NFSS commands `\scishape` and `\textsci`. Those commands are for slanted small capitals. ⚠ The `it` and `sc` selectors are *not* combinable to get those new features.

5. `poorman` (default): if you don't have the commercial complement, you must use this option. The main disadvantage is that small caps will became REDUCED CAPS.

2.2 Text commands

First it is not usefull to call the T1 encoding (`\usepackage[T1]{fontenc}`) because `fourier` will do it anyway.

Note that the T1 encoding have been completed:

☞ `\j` ȷ, **ȷ**, ***ȷ*** etc.

☞ `\ng`, `\NG` ŋ, Ŋ, *ŋ*, **Ŋ** etc.

☞ `\textperthousand`, `\textpertenthousand` ‰, ‱, **‰**, ***‱*** etc.

2.3 The companion encoding

The TS1 encoding is generally used through the `textcomp` package. This encoding is not fully implemented in Fourier-GUT*enberg* and the `textcomp` package is called by `fourier`

What is avaible is roughtly what is provided in the adobe standard encoding, with some complements:

☞ The euro symbol: `\texteuro` €, *€*, **€**, ***€***.

2.4 Fourier ornaments

Fourier-GUT*enberg* calls the fourier-ornaments companion package. See the `fourier-orns` documentation for details.

2.5 Mathematical encodings

Compatibility with amsmath

Fourier-GUT*enberg* is compatible with the `amsmath` package, you no longer need to call `amsmath` *before* `fourier` (thanks to Walter Schmidt). The `amssymb` package will be usefull only if the wanted symbols does not still exists in Fourier-GUT*enberg* (see the list below). If you finally need `amssymb`, it is best to call it *before* `fourier`.

Standard LaTeX math commands

All standard LaTeX math commands are supported by Fourier-GUT*enberg*.

Of course, all these symbols have been redesigned in order to suit Utopia in terms of boldness, contrast and proportions. Greek is particularly concerned:

$$a, \alpha, \mathrm{a}, \upalpha, n, \eta, \mathrm{n}, \upeta, c, \epsilon, \varepsilon, \mathrm{c}, \upepsilon, \upvarepsilon, \mathrm{A}, \Lambda$$

$$\boldsymbol{a, \alpha, \mathrm{a}, \upalpha, n, \eta, \mathrm{n}, \upeta, c, \epsilon, \varepsilon, \mathrm{c}, \upepsilon, \upvarepsilon, \mathrm{A}, \Lambda}$$

but also delimiters (and plenty of others glyphs):

$$-\left\{\left\{\left\{\left\{\left\{\left\{\{\{\widetilde{D}\}\}\right\}\right\}\right\}\right\}\right\}- \qquad -\left(\left(\left(\left(\left(\left((\widetilde{D})\right)\right)\right)\right)\right)\right)-$$

$$-\left|\left|\left|\left|\left|\left|\lfloor\widetilde{D}\rfloor\right|\right|\right|\right|\right|\right|- \qquad -\left[\left[\left[\left[\left[\left[[\widetilde{D}]\right]\right]\right]\right]\right]\right]-$$

Mathematical alphabets

Latin alphabets have been stolen to Utopia...

☞ Greek alphabet

Slanted version

$\alpha\,\beta\,\gamma\,\delta\,\epsilon\,\eta\,\zeta\,\theta\,\iota\,\kappa\,\lambda\,\mu\,\nu\,\xi\,\pi\,\rho\,\sigma\,\tau\,\upsilon\,\phi\,\chi\,\psi\,\omega$

$\Gamma\,\Delta\,\Theta\,\Lambda\,\Xi\,\Pi\,\Sigma\,\Upsilon\,\Phi\,\Psi\,\Omega$

Variants: $\varepsilon\,\vartheta\,\varkappa\,\varpi\,\varpi,\varrho\,\varsigma\,\varphi$

Upright version

$\upalpha\upbeta\upgamma\updelta\upepsilon\upeta\upzeta\uptheta\upiota\upkappa\uplambda\upmu\upnu\upxi\uppi\uprho\upsigma\uptau\upupsilon\upphi\upchi\uppsi\upomega$

$\Gamma\,\Delta\,\Theta\,\Lambda\,\Xi\,\Pi\,\Sigma\,\Upsilon\,\Phi\,\Psi\,\Omega$

Variants: $\upvarepsilon\,\upvartheta\,\upvarkappa\,\upvarpi\,\upvarpi\,\upvarrho\,\upvarsigma\,\upvarphi$

The way these symbols may be obtained depends of the required option (`sloped` ou `upright`). For instance, with

```
\[\alpha,\otheralpha,\Omega,\otherOmega\]
```

You get

$$\alpha,\upalpha,\Omega,\upOmega$$

with the `sloped` option and

$$\upalpha,\alpha,\upOmega,\Omega$$

with the `upright` option.

The `\other` prefix allow you to switch from one greek to the other.

☞ Calligraphic alphabet (`\mathcal` command)

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

☞ Blackboard-bold alphabet (`\mathbb` command). No need to load `amssymb` to get it!

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

Provided `amssymb` commands

`\leqslant` $\leqslant$	`\geqslant` $\geqslant$	`\blacktriangleleft` $\blacktriangleleft$
`\intercal` $\intercal$	`\vDash` $\vDash$	`\blacktriangleright` $\blacktriangleright$
`\nleqslant` $\nleqslant$	`\ngeqslant` $\ngeqslant$	`\nparallel` $\nparallel$
`\complement` $\complement$	`\hslash` $\hslash$	`\hbar` $\hbar$
`\nexists` $\nexists$	`\notowns` $\notowns$	`\varsubsetneq` $\varsubsetneq$
`\smallsetminus` $\smallsetminus$	`\nvDash` $\nvDash$	`\square` $\square$
`\leftleftarrows` $\leftleftarrows$	`\rightrightarrows` $\rightrightarrows$	`\subsetneqq` $\subsetneqq$
`\curvearrowleft` $\curvearrowleft$	`\curvearrowright` $\curvearrowright$	`\blacksquare` $\blacksquare$

Fourier-GUT*enberg* extended commands

The `\widehat` and `\widetilde` commands have been extended (like in `yhmath`).

$$\widehat{x}\ \widehat{xx}\ \widehat{xxx}\ \widehat{xxxx}\ \widehat{xxxxx}\ \widehat{xxxxxx}\ \widetilde{x}\ \widetilde{xx}\ \widetilde{xxx}\ \widetilde{xxxx}\ \widetilde{xxxxx}\ \widetilde{xxxxxx}$$

Fourier-GUT*enberg* specific commands

The following commands are provided by Fourier-GUT*enberg*.

☞ `\varkappa`, `\varvarrho`, `\varvarpi`, `\varpartialdiff` : $\varkappa$, ϱ, ϖ, ∂.

☞ `\parallelslant` et `\nparallelslant` : $/\!\!/$, $\not/\!\!/$.

☞ `\iint`, `\iiint`, `\oiint`,`\oiiint`,`\slashint` : $\iint$, $\iiint$, $\oiint$, $\oiiint$, $⨍$

$$\iint, \iiint, \oiint, \oiiint, ⨍$$

☞ `\llbracket`, `\rrbracket`, `\VERT`

$$-\left[\!\!\left[\left[\!\!\left[\left[\!\!\left[\left[\!\!\left[\left[\!\!\left[\widetilde{D}\right]\!\!\right]\right]\!\!\right]\right]\!\!\right]\right]\!\!\right]\right]\!\!\right]- \qquad -\left\Vert\left\Vert\left\Vert\left\Vert\left\Vert\left\Vert\left\Vert\left\Vert\left\Vert\left\Vert\widetilde{D}\right\Vert\right\Vert\right\Vert\right\Vert\right\Vert\right\Vert\right\Vert\right\Vert\right\Vert-$$

Note that the first version of Fourier-GUT*enberg* used `\dblbrackleft` and `\dblbrackright` in place of `\llbracket` and `\rrbracket`. The old commands still exist, but are deprecated.

☞ `\wideparen` et `\widering` (like in `yhmath`, but please note that it is necessary to call the `amsmath` package in order to get the `\widering` command in Fourier-GUT*enberg*).

$$\overbrace{XXXXXXXXX} \quad \overbrace{(A\cup B)\cap(C\cup D)}^{\circ}$$

☞ Finally `\widearc` and `\wideOarc`

$$\overbrace{AMB} \quad \overbrace{AMB}^{\rightarrow}$$

2.6 Usage of commercial typefaces

The `expert`, `oldstyle` or `fulloldstyle` options, if usable, provides these complementary commands:

- `\textsb` `\sbseries` semi-bold;
- `\textblack` `\blackseries` extra-black;
- `\texttitle` `\titleshape` titling (incomplete T1 encoding);
- `\oldstyle` to switch to the oldstyle digits with the `expert` option;
- `\lining` to switch to the lining digits with the `oldstyle` option.