

Kp-fonts: OpenType version

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This bundle provides OpenType versions of Type1 Kp-fonts designed by Christophe Caignaert. See [Kpfonts-Doc-English.pdf](#) for the full documentation of the original Type1 fonts.

It is usable only with LuaTeX or XeTeX engines; it consists of sixteen Text OpenType fonts, a Roman family **KpRoman** in eight shapes and weights—*Regular, Italic, Bold, BoldItalic, Light, LightItalic, Semibold, SemiboldItalic*—, a Sans-Serif family **KpSans** and a TypeWriter family **KpMono**, each of them in four shapes and weights—*Regular, Italic, Bold* and *BoldItalic*— and five Math OpenType fonts **KpMath-Regular**, **KpMath-Bold**, **KpMath-Light**, **KpMath-Semibold** and **KpMath-Sans**.

KpRoman and **KpSans** families have small caps available in two sizes (SmallCaps and PetitesCaps), upper and lowercase digits (0123456789), ancient ligatures *ct*, *st* and *Q* a long-tailed capital *Q*. Superior and inferior digits and letters have been added to the OpenType **KpRoman** and **KpSans** fonts for footnotes' calls and abbreviations 1st, 2nd...

Latin and Greek letters are available in Upright and Italic shapes, in Bold and Regular weights, for all Math fonts: α β Γ Δ , α β Γ Δ , α β Γ Δ , α β Γ Δ .

Blackboard Bold capitals are available in two shapes, Serif and Sans: `\mathbb{ABC}` prints either \mathbb{ABC} (option `[Style=bbsans]`) or \mathbb{ABC} (default). Commands `\mathcal{ABC}` and `\mathscr{ABC}` print either \mathcal{ABC} (default) or \mathcal{ABC} with option `[Style=mathcal]`, .

File [unimath-kpfonts.pdf](#) shows the full list of Unicode Math symbols provided by Kp-fonts, compared with other common Math fonts. More symbols, specific to Kp-fonts, are listed in section 3.2.

A style file [kpfont-otf.sty](#) is provided to load Kp-fonts easily. It is derived from [kpfont.sty](#) but options differ.

Please beware that the current version (0.30) is *experimental*.

All fonts are covered by OFL licence, style file and documentation are under LPPL-1.3 licence.

1 Loading `kpfonts-otf.sty`

For users of the original `kpfonts.sty` package, the easiest way to try the OpenType version is to load `kpfonts-otf.sty`:

```
\usepackage[ options ]{kpfonts-otf}
```

this loads `unicode-math` (and `fontspec`) and defines **KpRoman** (Regular or Light depending on options), **KpSans** and **KpMono** as Text fonts, **KpMath** (Regular or Light depending on options) as Math fonts.

`kpfonts-otf.sty` also defines all symbols available in `latexsym` and `amssymb` under the same names¹ and a bunch of Kp-fonts specifics symbols.

1.1 Global options for both Text and Maths

light: switches to *light* fonts, metrics are unchanged; *light* fonts might not look perfect on screen but they print fine.

Please compare *regular* (left) and *light* fonts (right):

Normal or light? Just a matter of taste. $E = mc^2$	Normal or light? Just a matter of taste. $E = mc^2$
--	--

<i>Normal or light? Just a matter of taste</i>	<i>Normal or light? Just a matter of taste</i>
--	--

Normal or light? Just a matter of taste	Normal or light? Just a matter of taste
--	--

<i>Normal or light? Just a matter of taste</i>	<i>Normal or light? Just a matter of taste</i>
---	---

nomath: load neither `unicode-math` nor **KpMath** fonts; useful for documents without Maths, or to choose other Math fonts.

notext: do not change any Text font, use the defaults.

nosf: do not change Sans-Serif Text fonts, use the defaults.

nott: do not change Typewriter Text fonts, use the defaults.

onlyrm: equivalent to the last two combined.

1.2 Options for Text fonts *only*

lighttext: switches to *light* Text fonts.

oldstylenums: provides lowercase digits as a default.

To get uppercase digits locally: `{\addfontfeature{Numbers=Lining} 123}`.

Examples, upright, italic, bold and bolditalic:

¹Unicode names often differ from AMS names.

- 0123456789 !
- 0123456789 !
- 0123456789 !
- 0123456789 !

oldstyle: provides lowercase digits as a default, long-tailed Q (Quebec) and (for Roman and Sans-Serif fonts only) old style ligatures « çt » et « st ».

Examples:

- *Quest* for an attractive font!
- *Quest* for an attractive font!
- **Quest** for an attractive font!
- QUEST FOR AN ATTRACTIVE FONT!
- *Quest* for an attractive font!
- QUEST FOR AN ATTRACTIVE FONT!

veryoldstyle: same as option **oldstyle** but the round ‘s’ is replaced by the long one ‘ſ’, unless it ends a word (then it remains ‘s’). Just code **s=** to force a round ‘s’ if needed. *Highlands’ mysterious castles* can be coded as `\textit{{Highlands’ mysterious castles}}`

largesmallcaps: prints larger SMALL CAPS than the default ones (PETITES CAPS).

1.3 Options for Math fonts *only*

lightmath: uses *light* Math fonts.

bbsans: command `\mathbb` prints Sans-Serif Blackboard Bold capitals with Serif fonts too: compare $\mathbb{C}, \mathbb{K}, \mathbb{N}, \mathbb{Q}, \mathbb{R}, \mathbb{Z}$, with $\mathbb{C}, \mathbb{K}, \mathbb{N}, \mathbb{Q}, \mathbb{R}, \mathbb{Z}$ (default).

mathcal: forces commands `\mathcal` and `\mathscr` to print $\mathcal{A}\mathcal{B}\mathcal{C}\mathcal{D}$ instead of $\mathcal{A}\mathcal{B}\mathcal{C}\mathcal{D}$ (default).

frenchstyle: Latin uppercase letters and all Greek letters are printed upright, only lowercase latin letters are printed in italics; this follows the French typographic usage.

oldstylenumsmath: prints lowercase digits in Maths (default is uppercase).

narrowiints: prints condensed repeated integrals :

$\int\int\int$ et $\int\int\int$ instead of $\int\int\int$ et $\int\int\int$ (default).

partialup: the `\partial` symbol is printed upright ∂ instead of ∂ .

fancyReIm: commands `\Re` et `\Im` print \Re et \Im respectively instead of \Re et \Im .

noDcommand: do not define `\D` to avoid incompatibilities with other packages.

2 Another way to load Kp-fonts

Loading Kp-fonts through `kpfonts-otf.sty` offers only a limited choice of options; using the standard commands `\setmainfont`, `\setsansfont`, `\setmonofont`, `\setmathfont` offers much more flexibility.

On the other hand, `kpfonts-otf.sty` defines a lot of useful commands to access AMS and specific Kp-fonts symbols. Loading `kpfonts-otf` with the `symbols` option enables to get all these commands defined without loading any font:

```
\usepackage[symbols]{kpfonts-otf}
```

Please note that `unicode-math`² (and `fontspec`) *are loaded* by this procedure, no need to do it again, unless specific options are required, then `unicode-math` has to be loaded *before* `kpfonts-otf`, f.i.:

```
\usepackage[math-style=ISO,bold-style=upright]{unicode-math}
\usepackage[symbols]{kpfonts-otf}
```

Then, it is up to the user to load Kp-fonts with whatever option he/she likes using commands

```
\set...font{font}[options].
```

For documents requiring no Math fonts, loading `fontspec` and using the `\set...font` commands is enough.

2.1 Options for Text fonts

Here are the options available for Text Kp-fonts:

Numbers=Lowercase to get lowercase digits 1,2,3 instead of 1,2,3; the default is **Numbers=Lining**.

SmallCapsFeatures = {Letters=SmallCaps} the `\textsc{}` command will print larger SMALL CAPS than the default PETITES CAPS.

The default setting is **SmallCapsFeatures = {Letters=PetiteCaps}**.

Ligatures=TeX (default) ' !` ?` -- --- print respectively ' i ÿ - —.

Ligatures=Common (default) automatic ligatures ff ffi ffl fi fl.

Ligatures=Rare Æ et Æ ligatures.

Style=Swash to get the long-tailed capital Q: Queen, also in small caps (both sizes): QUEEN and QUEEN ;

Style=Historic prints a long-s (f) instead of 's' except as last letter of a word: 'myfterious'; getting a normal 's' is possible anytime coding '**s=**'.

²A careful reading of both manuals [unicode-math.pdf](#) and [fontspec.pdf](#) (available in all TeX distributions) is required in order to take full advantage of these packages.

Ligatures=Historic switches specific ligatures for the long f: fi, fl, ft.

Options may be chosen for each font, say:

```
\setmonofont{KpMono}[Numbers=Lowercase,Style=Historic]
```

but can also be shared by different typefaces:

```
\defaultfontfeatures+[KpRoman,KpSans,KpMono]{Numbers=Lowercase}  
\defaultfontfeatures+[KpRoman,KpSans]{%  
  Ligatures = Rare,  
  Style = Swash,  
  SmallCapsFeatures = {Letters=SmallCaps},  
}  
\setmainfont{KpRoman}  
\setsansfont{KpSans}  
\setmonofont{KpMono}
```

Notes : 1. `\setmonofont{KpMono}`, `\setsansfont{KpSans}`, `\setmainfont{KpRoman}` rely on files `KpMono.fontspec`, `KpSans.fontspec` and `KpRoman.fontspec` installed by Kpfonts.

2. Note the + ending `\defaultfontfeatures+` : options are *added*, not overwriting any other (including those of `fontspec.cfg`).

3. Options can be gathered: `Ligatures={Rare,Historic}` (with braces) is equivalent to `Ligatures=Rare` and `Ligatures=Historic`.

4. These options can also be switched on and off *locally* using `\addfontfeatures` inside a group, f.i. to print lowercase digits 1234576890 with a font loaded with option `Numbers=Lining`:

```
{\addfontfeatures{Numbers=Lowercase}1234576890}
```

Actually, a shortcut is available in this case: `\oldstylenums{1234576890}`.

2.2 Options for Math fonts

The following options can be passed either to `unicode-math`³ or to `\setmathfont{}`:

math-style = `ISO`, `TeX` (défaut), `french`, `upright`;

bold-style = `ISO`, `TeX` (défaut), `upright`;

partial = `upright` (default italic);

nabla = `italic` (default upright);

Seven ‘Style Variants’ are available with Kp-fonts, here are the first three:

³See the manual `unicode-math.pdf`.

Style=mathcal (+ss01) commands `\mathcal{}` and `\mathscr{}` print \mathcal{ABC} instead of \mathscr{ABC} (default);

Style=bbsans (+ss02) `\mathbb{}` prints Sans-Serif Blackboard bold capitals \mathbb{ABC} for Serif Math fonts `KpMath-Regular` and `KpMath-light` instead of \mathbb{ABC} ;

Style=narrowiints (+ss03) provides condensed repeated integrals: \iiint instead of \iiint (default).

The next four tables present the other Style Variants available.

Table 1: Style=leqslant (+ss04)

Command	Default	Variant
<code>\leq</code>	\leq	\leqslant
<code>\geq</code>	\geq	\geqslant
<code>\nleq</code>	\nleq	\nleqslant
<code>\ngeq</code>	\ngeq	\ngeqslant
<code>\leqq</code>	\leq	\leqslant
<code>\geqq</code>	\geq	\geqslant
<code>\eqless</code>	$<$	$<slant$
<code>\eqgtr</code>	$>$	$>slant$

Table 2: Style=smaller (+ss05)

Command	Default	Variant
<code>\mid</code>	$ $	\mid
<code>\nmid</code>	\nmid	\nmid
<code>\parallel</code>	\parallel	\parallel
<code>\nparallel</code>	\nparallel	\nparallel

Table 3: Style=subsetneq (+ss06)

Command	Default	Variant
<code>\subsetneq</code>	\subsetneq	\subsetneq
<code>\supsetneq</code>	\supsetneq	\supsetneq
<code>\subsetneqq</code>	\subsetneqq	\subsetneqq
<code>\supsetneqq</code>	\supsetneqq	\supsetneqq

Table 5 on the following page shows the available ‘Glyph Variants’:

Example: with `\setmathfont{KpMath-Regular.otf}[CharacterVariant={3,6}]` commands `\epsilon` and `\phi` print ϵ and ϕ instead of ϵ et ϕ . The same is true of

Table 4: Style=parallelslant (+ss07)

Command	Default	Variant
<code>\parallel</code>	\parallel	\parallel
<code>\nparallel</code>	\nparallel	\nparallel

Example: switching styles 4 (leqslant) and 6 (subsetneq) can be achieved coding either `\setmathfont{KpMath-Regular.otf}[StylisticSet={4,6}]` or `\setmathfont{KpMath-Regular.otf}[Style={leqslant,subsetneq}]`

Table 5: Variantes de glyphe

	Default	Variant	Command
cv00	\Re \Im	\Re \Im	<code>\Re</code> <code>\Im</code>
cv01	\hbar	\hbar	<code>\hslash</code> or <code>\hbar</code>
cv02	\emptyset	\emptyset	<code>\emptyset</code>
cv03	ϵ	ϵ	<code>\epsilon</code>
cv04	κ	κ	<code>\kappa</code>
cv05	π	π	<code>\pi</code>
cv06	ϕ	ϕ	<code>\phi</code>
cv07	ρ	ρ	<code>\rho</code>
cv08	σ	σ	<code>\sigma</code>
cv09	θ	θ	<code>\theta</code>
cv10	Θ	Θ	<code>\Theta</code>

course for all shapes and and weights (upright, bold, bolditalic, sans-serif, etc.): f.i. with `math-style=french`, `\epsilon` and `\phi` print ϵ and ϕ .

Note about `\hbar`: `unicode-math` defines `\hbar` as `\hslash` (U+210F) while `amsmath` provides two different glyphs (italic h with horizontal or diagonal stroke). `kpfonts-otf` now follows `unicode-math`; the italic h with horizontal stroke can be printed using `\hslash` or `\hbar` together with character variant `cv01` or with `\mithbar` (replacement for AMS' command `\hbar`).

3 Kp-fonts specific commands

3.1 Integrals

Kp-fonts offers variants for integral symbols suitable for indefinite integrals, they are coded as `\varint`, `\variint`, `\variiint`, `\variiiiint` and `\varidotsint`. Compare $\int f(t) dt$ and $\int f(t) dt$ and also

$$\int f(t) dt \quad \text{and} \quad \int f(t) dt$$

`\D{...}` prints an upright ‘d’ and improves kernings around the differential element:

$$\text{\displaystyle\varint f(t)\D{t}} \text{ donne } \int f(t) dt.$$

3.2 Specific Math symbols

The next tables present symbols unavailable as Unicode characters, they are coded in Kp-fonts’ private zone.

<code>\mmapsto</code>	\mapsto	<code>\longmmapsto</code>	\longmapsto
<code>\mmapsfrom</code>	\mapsfrom	<code>\longmmapsfrom</code>	\longmapsfrom
<code>\Mmapsto</code>	\Mmapsto	<code>\Longmmapsto</code>	\Longmapsto
<code>\Mmapsfrom</code>	\Mmapsfrom	<code>\Longmmapsfrom</code>	\Longmapsfrom
<code>\leftrightdasharrow</code>	\leftrightarrow	<code>\leadsto</code>	\leadsto
<code>\boxright</code>	\boxrightarrow	<code>\boxleft</code>	\boxleftarrow
<code>\circleright</code>	\circrightarrow	<code>\circleleft</code>	\circleftarrow
<code>\Diamondright</code>	\diamondrightarrow	<code>\Diamondleft</code>	\diamondleftarrow
<code>\boxdotright</code>	\boxdotrightarrow	<code>\boxdotleft</code>	\boxdotleftarrow
<code>\circledotright</code>	\circledrightarrow	<code>\circledotleft</code>	\circledleftarrow
<code>\Diamonddotright</code>	\diamonddotrightarrow	<code>\Diamonddotleft</code>	\diamonddotleftarrow
<code>\boxRight</code>	\boxRightarrow	<code>\boxLeft</code>	\boxLeftarrow
<code>\boxdotRight</code>	\boxdotRightarrow	<code>\boxdotLeft</code>	\boxdotLeftarrow
<code>\DiamondRight</code>	\DiamondRightarrow	<code>\DiamondLeft</code>	\DiamondLeftarrow
<code>\DiamonddotRight</code>	\DiamonddotRightarrow	<code>\DiamonddotLeft</code>	\DiamonddotLeftarrow
<code>\multimapdot</code>	\multimapdot	<code>\multimapdotinv</code>	\multimapdotinv
<code>\multimapdotboth</code>	\multimapdotboth		
<code>\multimapbothvert</code>	\multimapbothvert	<code>\multimapdotbothvert</code>	\multimapdotbothvert
<code>\multimapdotbothAvert</code>	\multimapdotbothAvert	<code>\multimapdotbothBvert</code>	\multimapdotbothBvert
<code>\capplus</code>	\capplus	<code>\sqcupplus</code>	\sqcupplus
<code>\parallelslant</code>	\parallel	<code>\colonsim</code>	\sim
<code>\parallelbackslant</code>	\parallel	<code>\Colonsim</code>	\sim
<code>\eqqColon</code>	\equiv	<code>\Colondash</code>	\dashv
<code>\strictif</code>	\rightarrow	<code>\strictfi</code>	\leftarrow
<code>\circledvee</code>	\circledvee	<code>\circledwedge</code>	\circledwedge
<code>\openJoin</code>	\times	<code>\opentimes</code>	\times
<code>\lambdaslash</code>	λ	<code>\lambdabar</code>	λ
		<code>\VvDash</code>	\Vdash
		<code>\Wr</code>	\wr

<code>\idotsint</code>	$\int\cdots\int$	$\int\cdots\int$		
<code>\ointclockwise</code>	\oint	\oint	<code>\varointctrclockwise</code>	\oint
<code>\oiintclockwise</code>	\oiint	\oiint	<code>\oiintctrclockwise</code>	\oiint
<code>\varoiintclockwise</code>	\varoiint	\varoiint	<code>\varoiintctrclockwise</code>	\varoiint
<code>\oiintclockwise</code>	\oiint	\oiint	<code>\oiintctrclockwise</code>	\oiint
<code>\varoiintclockwise</code>	\varoiint	\varoiint	<code>\varoiintctrclockwise</code>	\varoiint
<code>\sqiint</code>	\sqiint	\sqiint	<code>\sqiint</code>	\sqiint

The full list of Unicode symbols available with Kp-fonts is shown in file [unimath-kpfonts.pdf](#).

3.3 Wide accents

- `\widehat` and `\widetilde`

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

- `\overline` and `\underline`

$$\bar{x} \quad \overline{xy} \quad \overline{xyz} \quad \overline{A \cup B} \quad \overline{A \cup (B \cap C) \cup D} \quad \underline{m+n+p}$$

- `\overparen` and `\underparen`

$$\widehat{x} \quad \widehat{xy} \quad \widehat{xyz} \quad \overline{A \cup B} \quad \overline{A \cup (B \cap C) \cup D} \quad \overbrace{x+y}^2 \quad \overbrace{a+b+\dots+z}^{26}$$

$$\underline{x} \quad \underline{xz} \quad \underline{xyz} \quad \underline{x+z}_2 \quad \underline{a+b+\dots+z}_{26}$$

- `\overbrace` and `\underbrace`

$$\overline{a} \quad \overline{ab} \quad \overline{abc} \quad \overline{abcd} \quad \overline{abcde} \quad \overbrace{a+b+c}^3 \quad \overbrace{a+b+\dots+z}^{26}$$

$$\underline{a} \quad \underline{ab} \quad \underline{abc} \quad \underline{abcd} \quad \underline{abcde} \quad \underbrace{a+b+c}_3 \quad \underbrace{a+b+\dots+z}_{26}$$

- `\overrightarrow` and `\overleftarrow`

$$\vec{v} \quad \vec{M} \quad \vec{vv} \quad \vec{AB} \quad \vec{ABC} \quad \vec{ABCD} \quad \vec{ABCDEFGH}.$$

$$\overleftarrow{v} \quad \overleftarrow{M} \quad \overleftarrow{vv} \quad \overleftarrow{AB} \quad \overleftarrow{ABC} \quad \overleftarrow{ABCD} \quad \overleftarrow{ABCDEFGH}$$

- Enfin `\widearc` and `\widearccarrow` (ou `\overrightarrow`)

$$\widehat{AMB} \quad \widehat{AMB}$$

3.4 Math Versions

Different versions of the **KpMath** fonts may be define in the document's preamble:

```
\setmathfont{KpMath-Bold.otf}[version=bold, options ]
\setmathfont{KpMath-Semibold.otf}[version=semibold, options ]
\setmathfont{KpMath-Sans.otf}[version=sans, options ]
\setmathfont{KpMath-Light.otf}[version=light, options ]
then, it is easy to switch from one version to another one with \mathversion{name}.
```

Example⁴:

```
\setmathfont{KpMath-Regular.otf}[Style=leqslant, CharacterVariant=3]
\setmathfont{KpMath-Bold.otf}[version=bold,
Style=leqslant, CharacterVariant=3]
\setmathfont{KpMath-Sans.otf}[version=sans,
Style=leqslant, CharacterVariant=3]
```

Here is the same equation in three versions, normal, bold and Sans-Serif:

$$\mathbb{E}_i(N_i) = \sum_{n \geq 1} P_i(N_i \geq n) = \frac{\varepsilon_i}{1 - \varepsilon_i} < +\infty$$

`\mathversion{bold}`

$$\mathbb{E}_i(N_i) = \sum_{n \geq 1} P_i(N_i \geq n) = \frac{\varepsilon_i}{1 - \varepsilon_i} < +\infty$$

`\mathversion{sans}`

$$\mathbb{E}_i(N_i) = \sum_{n \geq 1} P_i(N_i \geq n) = \frac{\varepsilon_i}{1 - \varepsilon_i} < +\infty$$

⁴Option `CharacterVariant=3` changes ϵ into ε .