

Test Greek LaTeX internal character
representations (LICR macros)

Günter Milde

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[illegible]

1 LICR input

The LaTeX internal character representation (LICR) is a verbose, fail-safe 7-bit ASCII encoding that can be used unaltered under both, 8-bit TeX and XeTeX/LuaTeX. Use cases are macro definitions and generated text.

See the source of this document, `test-inputenc.tex` for the input used in the examples below.

1.1 Greek alphabet

Greek letters via LICR macros:

A B Γ Δ E Z H Θ I K Λ M N Ξ O Π P Σ T Υ Φ X Ψ Ω
α β γ δ ε ζ η θ ι κ λ μ ν ξ ο π ρ σ τ υ φ χ ψ ω

The small sigma is set with a different glyph if it ends a word:

σ `textsigma`
ς `textfinalsigma` or `textvarsigma`

With Unicode fonts (Xe/LuaTeX, font encoding TU), the `\textautosigma` macro (which automatically chooses the glyph according to the position) does not work with LaTeX versions older than 2022/06 (requires the new `\MakeLowercase` implementation).

1.2 Diacritics

Greek accents are tonos = oxia, varia, psili, dasia, dialytika, and perispomeni.

Greek diacritics can be input by named macro or symbol macro:

άά ξξ àà ùù ïï ÿÿ ãã õõ ââ ãã óó ôô

Diacritics as spacing characters:

with empty argument: / / \ \ ' ' ~ ~ ¨ ¨ ~ ~ ¨ ¨ ~ ~ ¨ ¨
with space as argument: / / \ \ ' ' ~ ~ ¨ ¨ ~ ~ ¨ ¨ ~ ~ ¨ ¨
with protected space: / / \ \ ' ' ~ ~ ¨ ¨ ~ ~ ¨ ¨ ~ ~ ¨ ¨
with nobreakspace: / / \ \ ' ' ~ ~ ¨ ¨ ~ ~ ¨ ¨ ~ ~ ¨ ¨

1.2.1 mute iota

The mute iota is input after the base letter.

- `\ypogegrammeni` following a Greek letter sets a sub-iota (corresponding to COMBINING GREEK YPOGEGRAMMENI), e.g. ϣ.

In Unicode, a GREEK CAPITAL LETTER ... followed by COMBINING GREEK YPOGEGRAMMENI is normalized to GREEK CAPITAL LETTER ... WITH [... AND] PROSGEGRAMMENI, if a corresponding letter exists in the Unicode standard. In LGR fonts, this is implemented via a ligature definition (set the Babel language or wrap in `\ensuregreek`): Αῖ but Αῖ.

The shape and position of the mute iota with pre-composed capital letters depends on the selected font, both sub-iota and adscript iota are possible.

- `\prosgegrammeni` sets an adscript iota (GREEK PROSGEGRAMMENI), e.g. A_{ι} . In Unicode fonts the prosgegrammeni is spaced similar to the letter iota. In the CB Greek fonts, the only visible difference to the pre-composed characters is a slightly increased spacing.

Copy/Paste may convert the adscript iota to a small letter iota!

`\ypogegrammeni` and `\prosgegrammeni` following matching/not-matching base character (unchanged, lowercase, uppercase):

$A_{\iota}A_{\iota}$ $\alpha\alpha$ $A_{\iota}A_{\iota}$
 $\Lambda_{\iota}\Lambda_{\iota}$ $\lambda\lambda$ $\Lambda_{\iota}\Lambda_{\iota}$
 $\alpha\alpha_{\iota}$ $\alpha\alpha$ $A_{\iota}A_{\iota}$

Using `\ypogegrammeni` for the mute iota with both, small and capital letters usually gives better results.

1.3 Additional Greek symbols

1.3.1 symbols for Greek numbers

\textkappa `textkoppa`
 \textKoppa `textKoppa`
 \textqoppa (archaic koppa) `textqoppa`
 \textQoppa (archaic Koppa) `textQoppa`
 \textstigma `textstigma`
 \textSigma (Sigma-Tau-Ligature in CB-fonts)¹ `textSigma`
 \textsampi `textsampi`
 \textSampi `textSampi`
 \textdigamma `textdigamma`
 \textDigamma `textDigamma`
 \textdexiakeraia `textdexiakeraia`
 $\text{\textaristerikeraia}$ `textaristerikeraia`

1.3.2 generic text symbols

LICR macros for some symbols from the 8-bit font encoding LGR that are not confined to Greek but not defined in `tuenc.def` [2018/08/11 v2.0j].

\textsemicolon `textsemicolon`
 \textmicro `textmicro`
 \textschwa `textschwa`

The SI unit prefix MICRO SIGN is not upcased with `MakeUppercase`:

`textmu`: $\mu \mapsto M$ but `textmicro`: $\mu \mapsto \mu$.

¹the name “stigma” originally applied to a medieval sigma-tau ligature, whose shape was confusingly similar to the cursive digamma

text		mathematics	
macro	output	macro	output
<code>\textpi</code>	π	<code>\pi</code>	π
<code>\textvarpi</code>	missing	<code>\varpi</code>	ϖ
<code>\textpisymbol</code>	π		
<code>\textrho</code>	ρ	<code>\rho</code>	ρ
<code>\textvarrho</code>	missing	<code>\varrho</code>	ϱ
<code>\textrhosymbol</code>	ρ		
<code>\texttheta</code>	ϑ	<code>\theta</code>	θ
<code>\textvartheta</code>	missing	<code>\vartheta</code>	ϑ
<code>\textthetasymbol</code>	ϑ		
<code>\textepsilon</code>	ε	<code>\epsilon</code>	ϵ
<code>\textvarepsilon</code>	missing	<code>\varepsilon</code>	ε
<code>\textepsilonsymbol</code>	ε		
<code>\textphi</code>	φ	<code>\phi</code>	ϕ
<code>\textvarphi</code>	missing	<code>\varphi</code>	φ
<code>\textphisymbol</code>	φ		
<code>\textbeta</code>	β	<code>\beta</code>	β
<code>\textvarbeta</code>	missing	<i>missing</i>	
<code>\textbetasymbol</code>	β		
<code>\textkappa</code>	\varkappa	<code>\kappa</code>	κ
<code>\textvarkappa</code>	missing	<code>\varkappa</code>	\varkappa
<code>\textkappasymbol</code>	\varkappa		
<code>\textTheta</code>	Θ	<code>\Theta</code>	Θ
<code>\textvarTheta</code>	missing	<i>missing</i>	
<code>\textThetasymbol</code>	Θ		

Table 1: Macros for Greek symbol variants

2 Greek in section headings

The packages *textalpha* and *alphabetalpha* as well as *babel-greek*, add hyperref support for LICR input with non-standard accents or combined diacritics.

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