The TEXPower bundle

TEXPower Example: Package `tpslifonts`

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This is the demonstration document for `tpslifonts`, TEXPower's slide fonts configuration package.

Beamer and overhead presentations are often viewed under peculiar circumstances. Especially for presentations which are projected directly 'out of the computer', low power of the beamer, low resolution and an abundance of colors can lead to severe readability problems.

It is therefore of utmost importance to optimize font selection as much as possible towards *readability*.

The package `tpslifonts` offers a couple of 'harmonising' combinations of text and math fonts from the (distant) relatives of computer modern fonts, with a couple of extras for optimising readability.

The package offers the following features:

1. Text fonts from computer modern roman, computer modern sans serif, SliTeX computer modern sans serif, computer modern bright, or concrete roman.
2. Math fonts from computer modern math, computer modern bright math, or Euler fonts.
3. Support of additional symbol fonts like AMS symbols or doublestroke.
4. All fonts configured for ‘smooth scaling’ (like in the `type1cm` package).
5. Avoiding fonts not freely available in Type 1 format.
6. Careful design size selection for optimum readability.

In the following, the fonts configured by this package are listed, augmented by font samples and some larger examples which hopefully allow to review the configuration parameters.

Note that there are a couple of options and parameter settings in the preamble of `slifontsexample.tex` which allow to try different configuration variants.

This document has been typeset using T1 font encoding.

1 Text Fonts

Package `tpslifonts` has configured the following text fonts:

European Computer Modern Sans Serif Quotation (`eclq`):
The quick brown fox jumps over the lazy dog.

European Computer Modern Sans Serif Quotation Inclined (`ecli`):
The quick brown fox jumps over the lazy dog.

European Computer Modern Sans Serif Quotation Bold (`eclb`):

The quick brown fox jumps over the lazy dog.

European Computer Modern Sans Serif Quotation Bold Oblique (`eclo`):

The quick brown fox jumps over the lazy dog.

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2 Typewriter Fonts

For harmonising better with `eclq`, typewriter fonts are scaled up by a factor of 1.2.

Package `tpslifonts` has configured the following typewriter fonts:

European Computer Modern LaTeX Typewriter (`ecltt`):

The quick brown fox jumps over the lazy dog.

European Computer Modern Italic Typewriter Text (`ecit`):

The quick brown fox jumps over the lazy dog.

European Computer Modern Slanted Typewriter Text (ecst):
The quick brown fox jumps over the lazy dog.

European Computer Modern Typewritr Caps and Small Caps (ectc):
THE QUICK BROWN FOX JUMPS OVER THE LAZY DOG.

3 Math Fonts

The main math fonts are derived from the Computer Modern Bright Math fonts. Operators, digits, and upper case greek letters are taken from European Computer Modern Sans Serif Quotation (eclq).

For harmonising better with eclq, math fonts are scaled up by a factor of 1.15. The cmbright math fonts are scaled up by a factor of 1.1.

Operators, digits, some symbols and upper case greek letters are taken from SliTeX Sans Serif (lcmss):

$\min \max \sup \lim 12345 + = \Phi\Pi\Gamma\Theta$

Latin and lower case greek letters and some symbols are taken from Computer Modern Bright Math Slanted (**cmbrmi**):

$abcdABCD > / < \alpha\beta\gamma\delta$

Symbols and calligraphic letters are taken from Computer Modern Bright Math Symbols (**cmbrmi**):

$\mathcal{ABC} - * \div \equiv \leq \forall \cap \cup \nabla \neq$

Large and growing symbols are taken from Computer Modern Math Extension (**cmex**).

$$\left(\sum_{\left[\prod_{\biguplus}\right]}^{\left\{\bigcup^{\bigoplus}\right\}} \right)$$

Fraktur letters are taken from Euler Fraktur (**eufm**):

$\mathfrak{abcdABCD}$

Blackboard bold letters and a lot of additional math symbols are taken from the cmbright AMS math fonts (**cmbras**, **cmbrbs**):

$\mathbb{N}\mathbb{Z}\mathbb{Q}\mathbb{R}\ \Cap\ \boxtimes\ \gtrapprox \subseteqq \nsubseteqq \curvearrowright\ \complement \varnothing$

Additional math symbols are taken from St Mary's Road symbol font (**stmary**):

$\boxast\ \merge\ \nplus \olessthan\ \subsetpluseq\ \lightning$

Additional symbols are taken from Waldis symbol font (**wasy**):

∯ ‰ ☎ ⌀ ☺ ♀ ♂

Upper case script letters are taken from Ralph Smith Formal Script (**rsfs**):

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

Double stroke letters are taken from Doublestroke Font (**dsss**):

$\mathds{A}\mathds{B}\mathds{C}\mathds{D}\mathds{E}\mathds{F}\mathds{G}\mathds{H}\mathds{I}\mathds{J}\mathds{K}\mathds{L}\mathds{M}\mathds{N}\mathds{O}\mathds{P}\mathds{Q}\mathds{R}\mathds{S}\mathds{T}\mathds{U}\mathds{V}\mathds{W}\mathds{X}\mathds{Y}\mathds{Z}\mathds{1}\mathds{h}\mathds{k}$

3.1 Math Examples

Next, some examples of math formulae so you can see how the fonts work together (translations from german done by me).

From The Book.

(D) The functions f and g fulfil the same functional equation: $f\left(\frac{x}{2}\right)+f\left(\frac{x+1}{2}\right)=2f(x)$ and $g\left(\frac{x}{2}\right)+g\left(\frac{x+1}{2}\right)=2g(x)$.

For $f(x)$, we obtain this from the addition formulas for the sine and cosine:

$$f\left(\frac{x}{2}\right)+f\left(\frac{x+1}{2}\right)=\pi\left[\frac{\cos\frac{\pi x}{2}}{\sin\frac{\pi x}{2}}-\frac{\sin\frac{\pi x}{2}}{\cos\frac{\pi x}{2}}\right]$$

$$=2\pi\frac{\cos\left(\frac{\pi x}{2}+\frac{\pi x}{2}\right)}{\sin\left(\frac{\pi x}{2}+\frac{\pi x}{2}\right)}=2f(x).$$

The functional equation for g follows from

$$g_N\left(\frac{x}{2}\right)+g_N\left(\frac{x+1}{2}\right)=2g_{2N}(x)+\frac{2}{x+2N+1}.$$

From an undergrad book on calculus.

$$c_k = \frac{1}{2\pi}\int_0^{2\pi} f(x)e^{-\mathrm{i}kx}\,\mathrm{d}x = \frac{1}{2\pi}\sum_{j=1}^{r}\int_{t_{j-1}}^{t_j} f(x)e^{-\mathrm{i}kx}\,\mathrm{d}x$$

$$= \frac{-\mathrm{i}}{2\pi k}\int_0^{2\pi} \varphi(x)e^{-\mathrm{i}kx}\,\mathrm{d}x = \frac{-\mathrm{i}\gamma_k}{k}.$$

As for all $\alpha, \beta \in \mathbb{C}$, $|\alpha\beta| \leq \frac{1}{2}\left(|\alpha|^2 + |\beta|^2\right)$, it holds that

$$|c_k| \leq \frac{1}{2}\left(\frac{1}{|k|^2} + |\gamma_k|^2\right).$$

From the convergence of $\sum\limits_{k=1}^{\infty} \frac{1}{k^2}$ and $\sum\limits_{k=-\infty}^{\infty} |\gamma_k|^2$, it follows that

$$\sum_{k=-\infty}^{\infty} |c_k| < \infty.$$

From an undergrad book on calculus (2nd volume).

By Fubini's theorem,

$$\int_{Z_\varepsilon} \operatorname{div} F \, \mathrm{d}x = \sum_{k=1}^{n} \underbrace{\int_{Q'} \left(\int_{-\infty}^{h(x')-\varepsilon} \partial_k F_k \left(x', x_n\right) \, \mathrm{d}x_n \right) \mathrm{d}x'}_{=:I_k} . \tag{9}$$

Evaluation of I_k: Obviously,

$$I_n = \int_{Q'} F_n \left(x', h(x' - \varepsilon)\right) \, \mathrm{d}x'.$$

In the case $1 \leq k \leq n-1$, we employ the identity

$$\partial_k \left(\int_{-\infty}^{h(x')-\varepsilon} F_k \left(x', x_n\right) \, \mathrm{d}x_n \right) = \int_{-\infty}^{h(x')-\varepsilon} \partial_k F_k \left(x', x_n\right) \, \mathrm{d}x_n + F_k \left(x', h(x' - \varepsilon)\right) \cdot \partial_k h \left(x'\right) .$$

From a book on functional analysis.

Definition 25 Let $\mathcal{C}$ and $\mathcal{D}$ be categories and $\mathcal{F}, \mathcal{G}$ functors from $\mathcal{C}$ into $\mathcal{D}$. A mapping $\eta : \mathrm{Ob}\,\mathcal{C} \to \mathrm{Mor}\,\mathcal{D}$ is called a natural transformation between $\mathcal{F}$ and $\mathcal{G}$ if

(i) $\forall A \in \mathrm{Ob}\,\mathcal{C} : \eta(A) \in \mathrm{Mor}_{\mathcal{D}}\big(\mathcal{F}(A), \mathcal{G}(A)\big)$

(ii) $\forall A, B \in \mathrm{Ob}\,\mathcal{C}\ \forall f \in \mathrm{Mor}_{\mathcal{C}}(A, B)$:

$$\begin{tikzcd} \mathcal{F}(A) \arrow[r, "\mathcal{F}(f)"] \arrow[d, "\eta(A)"'] & \mathcal{F}(B) \arrow[d, "\eta(B)"] \\ \mathcal{G}(A) \arrow[r, "\mathcal{G}(f)"'] & \mathcal{G}(B) \end{tikzcd} \quad \text{or} \quad \begin{tikzcd} \mathcal{F}(A) \arrow[d, "\eta(A)"'] & \mathcal{F}(B) \arrow[l, "\mathcal{F}(f)"'] \arrow[d, "\eta(B)"] \\ \mathcal{G}(A) & \mathcal{G}(B) \arrow[l, "\mathcal{G}(f)"] \end{tikzcd}$$

respectively, commute, if $\mathcal{F}, \mathcal{G}$ are covariant or contravariant, respectively.

This is denoted as $\eta : \mathcal{F} \to \mathcal{G}$. Such a natural transformation is called a natural equivalence between $\mathcal{F}$ and $\mathcal{G}$ if $\eta(A)$ is an isomorphism for every $A \in \mathrm{Ob}\,\mathcal{C}$.

From an undergrad book on linear algebra.

Step 2. Determine an eigenvector v_2 for an eigenvalue λ_2 of F_2 (λ_2 is also an eigenvalue of F_1). Next, determine a $j_2 \in \{1, \dots, n\}$ such that

$$\mathfrak{B}_3 := (v_1, v_2, w_1, \dots, \widehat{w_{j_1}}, \dots, \widehat{w_{j_2}}, \dots, w_n)$$

is a base of V.

Next, calculate

$$M_{\mathfrak{B}_3}(F) = \begin{pmatrix} \lambda_1 & \cdot & \cdot & \cdot & \cdot & \cdot & \cdot \\ 0 & \lambda_2 & \cdot & \cdot & \cdot & \cdot & \cdot \\ \cdot & 0 & & & & & \\ \cdot & \cdot & & & & & \\ \cdot & \cdot & & & A_3 & & \\ \cdot & \cdot & & & & & \\ 0 & 0 & & & & & \end{pmatrix}.$$

If $W_3 := \mathrm{Span}(w_1, \dots, \widehat{w_{j_1}}, \dots, \widehat{w_{j_2}}, \dots, w_n)$, then A_3 determines a linear mapping $F_3 : W_3 \to W_3$.

From an undergrad book on linear algebra (2nd volume).

Remark. If $(Y_i)_{i\in I}$ is a family of affine subspaces Y_i of an affine space X, then

$$Y := \bigcup_{i\in I} Y_i \subset X$$

is again an affine subspace. If $Y \neq \emptyset$, then

$$T(Y) = \bigcup_{i\in I} T(Y_i)\,.$$

Proof. For $Y = \emptyset$, nothing is to be proved. Otherwise, there is a fixed point $p_0 \in Y$ such that

$$T(Y) = \left\{ \overrightarrow{p_0 q} \in T(X) \,\middle|\, q \in \bigcup_{i\in I} Y_i \right\}$$
$$= \bigcup_{i\in I} \left\{ \overrightarrow{p_0 q} \in T(X) \,\middle|\, q \in Y_i \right\} = \bigcup_{i\in I} T(Y_i)\,.$$

From this, both claims follow.

From a book on measure theory.

Analogously, the general associativity of σ-Algebra products is shown, that is

$$(23.12) \qquad \left(\bigotimes_{i=1}^{m} \mathscr{A}_i\right) \otimes \left(\bigotimes_{i=m+1}^{n} \mathscr{A}_i\right) = \bigotimes_{i=1}^{n} \mathscr{A}_i \quad (1 \leq m < n).$$

Statement (23.11) allows to prove the existence of the product measure for all $n \geq 2$ by induction.

23.9 Theorem *For σ-finite measures $\mu_1, \ldots, \mu_n$ on $\mathscr{A}_1, \ldots, \mathscr{A}_n$, there exists exactly one measure π on $\mathscr{A}_1 \otimes \cdots \otimes \mathscr{A}_n$ such that*

$$(23.13) \qquad \pi\,(A_1 \times \cdots \times A_n) = \mu_1(A_1) \cdot \cdots \cdot \mu_n(A_n)$$

for all $A_i \in \mathscr{A}_i$ $(i = 1, \ldots, n)$. Here, π is also σ-finite.

From a book on probability theory.

17.3 Lemma *If T takes values exclusively from $\mathbb{N}$, then X_T is an $\mathscr{F}_T$-measurable random variable with values in $\left(\Omega', \mathscr{A}'\right)$. If only $P\{T < +\infty\} = 1$ holds, then up to P-almost certain equality there exists exactly one $\mathscr{F}_T$-measurable random variable X^* with values in $\left(\Omega', \mathscr{A}'\right)$ which fulfils the condition*

$$(17.7) \qquad X^*(\omega) = X_{T(\omega)}(\omega) \quad \textit{for all } \omega \in \{T < \infty\}.$$

Proof. It suffices to treat the second case and provide an $\mathscr{F}_T$-measurable random variable fulfilling the given condition. To this end, choose an arbitrary $\omega' \in \Omega'$. We set

$$X^*(\omega) := \begin{cases} X_{T(\omega)}(\omega), & \omega \in \{T < \infty\}, \\ \omega', & \omega \in \{T = \infty\}. \end{cases}$$

For every $A' \in \mathscr{A}'$, it is to be proved that $A := \left\{X^* \in A'\right\}$ is an element of $\mathscr{F}_T$.

From my MSc Thesis.

If we expand equations (4.102) and (4.103), we get

$$\left(\sum_{q \in \mathsf{PV}} \max\left(M(q), M(\neg q)\right) \right) - \delta$$

$$= \sum_{\substack{q \in \mathsf{PV} \\ q \neq p}} \max \begin{pmatrix} \frac{m}{M'_{>s}(\neg p)} \cdot M'_{>s}(q) + \frac{m}{M'_{s}(p)} \cdot M'_{s}(q), \\ \frac{m}{M'_{>s}(\neg p)} \cdot M'_{>s}(\neg q) + \frac{m}{M'_{s}(p)} \cdot M'_{s}(\neg q) \end{pmatrix}$$

$$- \frac{m}{M'_{>s}\left(\neg p\right)} \cdot \delta'_{>s} - \frac{m}{M'_{s}\left(p\right)} \cdot \delta'_{s}$$

$$- \left(\frac{m}{M'_{>s}\left(\neg p\right)} - 1 \right) \cdot r_1 - \left(\frac{m}{M'_{s}\left(p\right)} - 1 \right) \cdot r_2$$

$$- \max(r_1, r_2) + m$$

From my PhD Thesis.

By Lemma 2.2.7,

$$^{d}\overline{a} \uplus {}^{d'}\overline{b} = {}^{\left(d \curlyvee \delta\left({}^{d'}\overline{b}\right)\right)}\overline{a \sqcap \alpha\left({}^{d'}\overline{b}\right)}.$$

Furthermore,

$$d \preccurlyeq d \curlyvee \delta\left({}^{d'}\overline{b}\right),$$

$$a \sqcap \alpha\left({}^{d'}\overline{b}\right) \sqsubseteq a.$$

From this,

$$^{d}\overline{a} \subseteqq {}^{d}\overline{a} \uplus {}^{d'}\overline{b}$$

follows by (2.3).

4 Comparison of Characters

As mentioned before, `tpslifonts` does a little scaling and fiddling with design sizes to make the fonts harmonize as much as possible.

The following scaling factors are used in this document:

Name	Purpose	Value
`\TPSFttscale`	Typewriter fonts	1.2
`\TPSFmathscale`	Math fonts related to cm math	1.15
`\TPSFeulerscale`	Euler math fonts	1.1
`\TPSFcmbrscale`	Cmbright math fonts	1.1

Unfortunately, the base font European Computer Modern Sans Serif Quotation (`eclq`) is quite excentric wrt the height ratio of upper case and lower case letters; compare `eclq` $\boxed{\text{a A}}$ with `ecss` $\boxed{\text{a A}}$.

For this reason, no amount of scaling can make `eclq` harmonise completely with ‘normal’ fonts.

In this section, you will see lists of similar characters from different fonts, arranged such that you can check how good the sizes match. You then have to set your priorities and decide the respective scaling factors accordingly. See the comments in the preamble of `slifontsexample.tex` for instructions on how to experiment with scaling.

To account for different design sizes, the character samples are shown in several sizes.

4.1 Digits

Digits from European Computer Modern Sans Serif Quotation (`eclq`), European Computer Modern LaTeX Typewriter (`ecltt`), European Computer Modern Sans Serif Quotation Inclined (`ecli`), and European Computer Modern Italic Typewriter Text (`ecit`) are listed in sizes 5pt, 6pt, 7pt, 8pt, 9pt, 10pt, 11pt, and 17pt.

00 *00* 00 *00* 00 *00* 00 *00* 00 *00* 00 *00* 00 *00* 00 *00*

11 *11* 11 *11* 11 *11* 11 *11* 11 *11* 11 *11* 11 *11* 11 *11*

22 *22* 22 *22* 22 *22* 22 *22* 22 *22* 22 *22* 22 *22* 22 *22*

33 *33* 33 *33* 33 *33* 33 *33* 33 *33* 33 *33* 33 *33* 33 *33*

44 *44* 44 *44* 44 *44* 44 *44* 44 *44* 44 *44* 44 *44* 44 *44*

55 *55* 55 *55* 55 *55* 55 *55* 55 *55* 55 *55* 55 *55* 55 *55*

66 *66* 66 *66* 66 *66* 66 *66* 66 *66* 66 *66* 66 *66* 66 *66*

77 *77* 77 *77* 77 *77* 77 *77* 77 *77* 77 *77* 77 *77* 77 *77*

88 *88* 88 *88* 88 *88* 88 *88* 88 *88* 88 *88* 88 *88* 88 *88*

99 *99* 99 *99* 99 *99* 99 *99* 99 *99* 99 *99* 99 *99* 99 *99*

4.2 Upper Case Letters

Upper Case Letters from European Computer Modern Sans Serif Quotation (`eclq`), European Computer Modern LaTeX Typewriter (`ecltt`), Euler Fraktur (`eufm`), cmbright AMS math (cmbrbs; for blackboard bold), Doublestroke Font (dsss), European Computer Modern Sans Serif Quotation Inclined (ecli), European Computer Modern Italic Typewriter Text (ecit), Computer Modern Bright Math Slanted (cmbrmi), Computer Modern Bright Math Symbols (cmbrmi) for calligraphic letters, Ralph Smith Formal Script (rsfs) are listed in sizes 5pt, 7pt, and 10pt.

AA$\mathfrak{A}\mathbb{A}$A *AA* $A\mathcal{A}\mathscr{A}$ AA$\mathfrak{A}\mathbb{A}$A *AA* $A\mathcal{A}\mathscr{A}$ AA$\mathfrak{A}\mathbb{A}$A *AA* $A\mathcal{A}\mathscr{A}$ AA$\mathfrak{A}\mathbb{A}$A *AA* $A\mathcal{A}\mathscr{A}$

BB$\mathfrak{B}\mathbb{B}$B *BB* $B\mathcal{B}\mathscr{B}$ BB$\mathfrak{B}\mathbb{B}$B *BB* $B\mathcal{B}\mathscr{B}$ BB$\mathfrak{B}\mathbb{B}$B *BB* $B\mathcal{B}\mathscr{B}$ BB$\mathfrak{B}\mathbb{B}$B *BB* $B\mathcal{B}\mathscr{B}$

CC$\mathfrak{C}\mathbb{C}$C *CC* $C\mathcal{C}\mathscr{C}$ CC$\mathfrak{C}\mathbb{C}$C *CC* $C\mathcal{C}\mathscr{C}$ CC$\mathfrak{C}\mathbb{C}$C *CC* $C\mathcal{C}\mathscr{C}$ CC$\mathfrak{C}\mathbb{C}$C *CC* $C\mathcal{C}\mathscr{C}$

DD$\mathfrak{D}\mathbb{D}$D *DD* $D\mathcal{D}\mathscr{D}$ DD$\mathfrak{D}\mathbb{D}$D *DD* $D\mathcal{D}\mathscr{D}$ DD$\mathfrak{D}\mathbb{D}$D *DD* $D\mathcal{D}\mathscr{D}$ DD$\mathfrak{D}\mathbb{D}$D *DD* $D\mathcal{D}\mathscr{D}$

EE$\mathfrak{E}\mathbb{E}$E *EE* $E\mathcal{E}\mathscr{E}$ EE$\mathfrak{E}\mathbb{E}$E *EE* $E\mathcal{E}\mathscr{E}$ EE$\mathfrak{E}\mathbb{E}$E *EE* $E\mathcal{E}\mathscr{E}$ EE$\mathfrak{E}\mathbb{E}$E *EE* $E\mathcal{E}\mathscr{E}$

FF$\mathfrak{F}\mathbb{F}$F *FF* $F\mathcal{F}\mathscr{F}$ FF$\mathfrak{F}\mathbb{F}$F *FF* $F\mathcal{F}\mathscr{F}$ FF$\mathfrak{F}\mathbb{F}$F *FF* $F\mathcal{F}\mathscr{F}$ FF$\mathfrak{F}\mathbb{F}$F *FF* $F\mathcal{F}\mathscr{F}$

GG$\mathfrak{G}\mathbb{G}$G *GG* $G\mathcal{G}\mathscr{G}$ GG$\mathfrak{G}\mathbb{G}$G *GG* $G\mathcal{G}\mathscr{G}$ GG$\mathfrak{G}\mathbb{G}$G *GG* $G\mathcal{G}\mathscr{G}$ GG$\mathfrak{G}\mathbb{G}$G *GG* $G\mathcal{G}\mathscr{G}$

HH$\mathfrak{H}\mathbb{H}$H *HH* $H\mathcal{H}\mathscr{H}$ HH$\mathfrak{H}\mathbb{H}$H *HH* $H\mathcal{H}\mathscr{H}$ HH$\mathfrak{H}\mathbb{H}$H *HH* $H\mathcal{H}\mathscr{H}$ HH$\mathfrak{H}\mathbb{H}$H *HH* $H\mathcal{H}\mathscr{H}$

II$\mathfrak{I}\mathbb{I}$I *II* $I\mathcal{I}\mathscr{I}$ II$\mathfrak{I}\mathbb{I}$I *II* $I\mathcal{I}\mathscr{I}$ II$\mathfrak{I}\mathbb{I}$I *II* $I\mathcal{I}\mathscr{I}$ II$\mathfrak{I}\mathbb{I}$I *II* $I\mathcal{I}\mathscr{I}$

JJ$\mathfrak{J}\mathbb{J}$J *JJ* $J\mathcal{J}\mathscr{J}$ JJ$\mathfrak{J}\mathbb{J}$J *JJ* $J\mathcal{J}\mathscr{J}$ JJ$\mathfrak{J}\mathbb{J}$J *JJ* $J\mathcal{J}\mathscr{J}$ JJ$\mathfrak{J}\mathbb{J}$J *JJ* $J\mathcal{J}\mathscr{J}$

KK$\mathfrak{K}\mathbb{K}$K *KK* $K\mathcal{K}\mathscr{K}$ KK$\mathfrak{K}\mathbb{K}$K *KK* $K\mathcal{K}\mathscr{K}$ KK$\mathfrak{K}\mathbb{K}$K *KK* $K\mathcal{K}\mathscr{K}$ KK$\mathfrak{K}\mathbb{K}$K *KK* $K\mathcal{K}\mathscr{K}$

L L $\mathfrak{L}$ $\mathbb{L}$ $\mathbb{L}$ *L L L L* $\mathcal{L}$ L L $\mathfrak{L}$ $\mathbb{L}$ $\mathbb{L}$ *L L L L* $\mathcal{L}$ L L $\mathfrak{L}$ $\mathbb{L}$ $\mathbb{L}$ *L L L L* $\mathcal{L}$ L L $\mathfrak{L}$ $\mathbb{L}$ $\mathbb{L}$ *L L L L* $\mathcal{L}$

M M $\mathfrak{M}$ $\mathbb{M}$ $\mathbb{M}$ *M M M M* $\mathcal{M}$ M M $\mathfrak{M}$ $\mathbb{M}$ $\mathbb{M}$ *M M M M* $\mathcal{M}$ M M $\mathfrak{M}$ $\mathbb{M}$ $\mathbb{M}$ *M M M M* $\mathcal{M}$ M M $\mathfrak{M}$ $\mathbb{M}$ $\mathbb{M}$ *M M M M* $\mathcal{M}$

N N $\mathfrak{N}$ $\mathbb{N}$ $\mathbb{N}$ *N N N N* $\mathcal{N}$ N N $\mathfrak{N}$ $\mathbb{N}$ $\mathbb{N}$ *N N N N* $\mathcal{N}$ N N $\mathfrak{N}$ $\mathbb{N}$ $\mathbb{N}$ *N N N N* $\mathcal{N}$ N N $\mathfrak{N}$ $\mathbb{N}$ $\mathbb{N}$ *N N N N* $\mathcal{N}$

O O $\mathfrak{O}$ $\mathbb{O}$ $\mathbb{O}$ *O O O O* $\mathcal{O}$ O O $\mathfrak{O}$ $\mathbb{O}$ $\mathbb{O}$ *O O O O* $\mathcal{O}$ O O $\mathfrak{O}$ $\mathbb{O}$ $\mathbb{O}$ *O O O O* $\mathcal{O}$ O O $\mathfrak{O}$ $\mathbb{O}$ $\mathbb{O}$ *O O O O* $\mathcal{O}$

P P $\mathfrak{P}$ $\mathbb{P}$ $\mathbb{P}$ *P P P P* $\mathcal{P}$ P P $\mathfrak{P}$ $\mathbb{P}$ $\mathbb{P}$ *P P P P* $\mathcal{P}$ P P $\mathfrak{P}$ $\mathbb{P}$ $\mathbb{P}$ *P P P P* $\mathcal{P}$ P P $\mathfrak{P}$ $\mathbb{P}$ $\mathbb{P}$ *P P P P* $\mathcal{P}$

Q Q $\mathfrak{Q}$ $\mathbb{Q}$ $\mathbb{Q}$ *Q Q Q Q* $\mathcal{Q}$ Q Q $\mathfrak{Q}$ $\mathbb{Q}$ $\mathbb{Q}$ *Q Q Q Q* $\mathcal{Q}$ Q Q $\mathfrak{Q}$ $\mathbb{Q}$ $\mathbb{Q}$ *Q Q Q Q* $\mathcal{Q}$ Q Q $\mathfrak{Q}$ $\mathbb{Q}$ $\mathbb{Q}$ *Q Q Q Q* $\mathcal{Q}$

R R $\mathfrak{R}$ $\mathbb{R}$ $\mathbb{R}$ *R R R R* $\mathcal{R}$ R R $\mathfrak{R}$ $\mathbb{R}$ $\mathbb{R}$ *R R R R* $\mathcal{R}$ R R $\mathfrak{R}$ $\mathbb{R}$ $\mathbb{R}$ *R R R R* $\mathcal{R}$ R R $\mathfrak{R}$ $\mathbb{R}$ $\mathbb{R}$ *R R R R* $\mathcal{R}$

S S $\mathfrak{S}$ $\mathbb{S}$ $\mathbb{S}$ *S S S S* $\mathcal{S}$ S S $\mathfrak{S}$ $\mathbb{S}$ $\mathbb{S}$ *S S S S* $\mathcal{S}$ S S $\mathfrak{S}$ $\mathbb{S}$ $\mathbb{S}$ *S S S S* $\mathcal{S}$ S S $\mathfrak{S}$ $\mathbb{S}$ $\mathbb{S}$ *S S S S* $\mathcal{S}$

T T $\mathfrak{T}$ $\mathbb{T}$ $\mathbb{T}$ *T T T T* $\mathcal{T}$ T T $\mathfrak{T}$ $\mathbb{T}$ $\mathbb{T}$ *T T T T* $\mathcal{T}$ T T $\mathfrak{T}$ $\mathbb{T}$ $\mathbb{T}$ *T T T T* $\mathcal{T}$ T T $\mathfrak{T}$ $\mathbb{T}$ $\mathbb{T}$ *T T T T* $\mathcal{T}$

U U $\mathfrak{U}$ $\mathbb{U}$ $\mathbb{U}$ *U U U U* $\mathcal{U}$ U U $\mathfrak{U}$ $\mathbb{U}$ $\mathbb{U}$ *U U U U* $\mathcal{U}$ U U $\mathfrak{U}$ $\mathbb{U}$ $\mathbb{U}$ *U U U U* $\mathcal{U}$ U U $\mathfrak{U}$ $\mathbb{U}$ $\mathbb{U}$ *U U U U* $\mathcal{U}$

V V $\mathfrak{V}$ $\mathbb{V}$ $\mathbb{V}$ *V V V V* $\mathcal{V}$ V V $\mathfrak{V}$ $\mathbb{V}$ $\mathbb{V}$ *V V V V* $\mathcal{V}$ V V $\mathfrak{V}$ $\mathbb{V}$ $\mathbb{V}$ *V V V V* $\mathcal{V}$ V V $\mathfrak{V}$ $\mathbb{V}$ $\mathbb{V}$ *V V V V* $\mathcal{V}$

W W $\mathfrak{W}$ $\mathbb{W}$ $\mathbb{W}$ *W W W W* $\mathcal{W}$ W W $\mathfrak{W}$ $\mathbb{W}$ $\mathbb{W}$ *W W W W* $\mathcal{W}$ W W $\mathfrak{W}$ $\mathbb{W}$ $\mathbb{W}$ *W W W W* $\mathcal{W}$ W W $\mathfrak{W}$ $\mathbb{W}$ $\mathbb{W}$ *W W W W* $\mathcal{W}$

X X $\mathfrak{X}$ $\mathbb{X}$ $\mathbb{X}$ *X X X X* $\mathcal{X}$ X X $\mathfrak{X}$ $\mathbb{X}$ $\mathbb{X}$ *X X X X* $\mathcal{X}$ X X $\mathfrak{X}$ $\mathbb{X}$ $\mathbb{X}$ *X X X X* $\mathcal{X}$ X X $\mathfrak{X}$ $\mathbb{X}$ $\mathbb{X}$ *X X X X* $\mathcal{X}$

Y Y $\mathfrak{Y}$ $\mathbb{Y}$ $\mathbb{Y}$ *Y Y Y Y* $\mathcal{Y}$ Y Y $\mathfrak{Y}$ $\mathbb{Y}$ $\mathbb{Y}$ *Y Y Y Y* $\mathcal{Y}$ Y Y $\mathfrak{Y}$ $\mathbb{Y}$ $\mathbb{Y}$ *Y Y Y Y* $\mathcal{Y}$ Y Y $\mathfrak{Y}$ $\mathbb{Y}$ $\mathbb{Y}$ *Y Y Y Y* $\mathcal{Y}$

Z Z $\mathfrak{Z}$ $\mathbb{Z}$ $\mathbb{Z}$ *Z Z Z Z* $\mathcal{Z}$ Z Z $\mathfrak{Z}$ $\mathbb{Z}$ $\mathbb{Z}$ *Z Z Z Z* $\mathcal{Z}$ Z Z $\mathfrak{Z}$ $\mathbb{Z}$ $\mathbb{Z}$ *Z Z Z Z* $\mathcal{Z}$ Z Z $\mathfrak{Z}$ $\mathbb{Z}$ $\mathbb{Z}$ *Z Z Z Z* $\mathcal{Z}$

4.3 Lower Case Letters

Lower Case Letters from European Computer Modern Sans Serif Quotation (`eclq`), European Computer Modern LaTeX

Typewriter (ecltt), Euler Fraktur (eufm), European Computer Modern Sans Serif Quotation Inclined (ecli), European Computer Modern Italic Typewriter Text (ecit), Computer Modern Bright Math Slanted (cmbrmi) are listed in sizes 5pt, 7pt, 10pt, 12pt, and 14pt.

aaa aaa aaa aaa aaa aaa aaa aaa aaa aaa

bbb bbb bbb bbb bbb bbb bbb bbb bbb bbb

ccc ccc ccc ccc ccc ccc ccc ccc ccc ccc

ddd ddd ddd ddd ddd ddd ddd ddd ddd ddd

eee eee eee eee eee eee eee eee eee eee

fff fff fff fff fff fff fff fff fff fff

ggg ggg ggg ggg ggg ggg ggg ggg ggg ggg

hhh hhh hhh hhh hhh hhh hhh hhh hhh hhh

iii iii iii iii iii iii iii iii iii iii

jjj jjj jjj jjj jjj jjj jjj jjj jjj jjj

kkk kkk kkk kkk kkk kkk kkk kkk kkk kkk

lll lll lll lll lll lll lll lll lll lll

mmm mmm mmm mmm mmm mmm mmm mmm mmm mmm

nnn nnn nnn nnn nnn nnn nnn nnn nnn nnn

ooo ooo ooo ooo ooo ooo ooo ooo ooo ooo

ppp ppp ppp ppp ppp ppp ppp ppp ppp ppp

qqq qqq qqq qqq qqq qqq qqq qqq qqq qqq

rrr rrr rrr rrr rrr rrr rrr rrr rrr rrr

sss sss sss sss sss sss sss sss sss sss

ttt ttt ttt ttt ttt ttt ttt ttt ttt ttt

uuu uuu uuu uuu uuu uuu uuu uuu uuu uuu

vvv vvv vvv vvv vvv vvv vvv vvv vvv vvv

www www www www www www www www www www

xxx xxx xxx xxx xxx xxx xxx xxx xxx xxx

yyy yyy yyy yyy yyy yyy yyy yyy yyy yyy

zzz zzz zzz zzz zzz zzz zzz zzz zzz zzz

4.4 Math Symbols

The different math fonts define symbols of similar shape, which should look equally large. Symbols from SliTeX Sans Serif (`lcmss`), Computer Modern Bright Math Slanted (`cmbrmi`), Computer Modern Bright Math Symbols (`cmbrmi`), cmbright AMS math fonts, St Mary's Road symbol font (`stmary`), Waldis symbol font (`wasy`) are listed in sizes 5pt, 7pt, 10pt, and 12pt.

To make clear which characters stem from which font, they are separated by vertical bars.