# Using TEX Fonts in the Gnuplot Postscript Terminal

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The Postscript terminal can embed Postscript Type 1 fonts (with extensions `.pfa` and `.pfb`) and TrueType fonts (extension `.ttf`)[1] using the command

```
set terminal postscript fontfile '<filename>'
```

The `fontfile` option can be used multiple times. See the sections *set terminal postscript* and *set fontpath* in the Gnuplot documentation for further description.

The embedded font can be used by

```
set terminal postscript '<fontname>' <size>
```

or in postscript enhanced terminal as following example:

```
set xlabel '{/CMMI10 x}'
```

Among other things, the font embedding is useful for generating plots to be included in LATEX documents. For normal text, the *cm-super* Postscript Type 1 fonts are a good choice. They are available from CTAN servers, e.g.

`ftp://ftp.dante.de/tex-archive/fonts/ps-type1/cm-super/`

The normal upright font with serifes is defined in `sfrm1000.pfb`, and the font name is `SFRM1000`[2] (The `1000` means that this font is designed for 10 pt). Replace the `rm` by `it`, `bx` or other combinations in both the file name and the font name (here, in uppercase letters) in order to get other font shapes. The encoding of these fonts is ordinary and thus is not described here. Table 1 shows some examples of fonts contained in the cm-super font bundle.

For mathematics the Type 1 versions of the Computer Modern fonts are useful. They should be installed in most TEX implementations and are also available from CTAN servers, e.g.

`ftp://ftp.dante.de/tex-archive/fonts/cm/ps-type1/bluesky/pfb/`

Here, the font name is the base of the file name in uppercase letters, e.g. the file `cmmi10.pfb` contains the font `CMMI10`. Since the encoding of these fonts is strange, a table containing all characters for some fonts follows. The font `CMEX10` contains large symbols for mathematics. They overlap sometimes in the table. Since the baseline of the `CMEX10` font is at the top of the signs, Gnuplot defines a font `CMEX10-Baseline` with a different baseline if `CMEX10` is embedded (normally by using `fontfile 'cmex10.pfb'`. In contrast to the other fonts, `CMEX10` is only available in the design size 10 pt.

You can access all characters of the fonts by typing their octal code. To get a ♡ symbol, you may type:

```
set label '{/CMSY10 \176}' at graph 0.5,0.5
```

[1] If `.pfb` and `.ttf` fonts really can be embedded depends on your gnuplot installation: It needs to be able to handle pipes.

[2] If you have an old version of the cm-super font, prior 2001-10-14, the font name is in lowercase letters: `sfrm1000`. You should update to a new version.

Table 1: Some fonts in the cm-super font bundle (for a designsize of 10 pt)

| File name | Full font name (all preceded by `Computer Modern`) | Example |
|---|---|---|
| `sfrm1000.pfb` | `Roman` | Example |
| `sfbx1000.pfb` | `Bold Extended` | **Example** |
| `sfti1000.pfb` | `Italic` | *Example* |
| `sfbi1000.pfb` | `Bold Extended Italic` | ***Example*** |
| `sfsl1000.pfb` | `Slanted` | *Example* |
| `sfbl1000.pfb` | `Bold Extended Slanted` | ***Example*** |
| `sfcc1000.pfb` | `Caps and Small Caps` | EXAMPLE |
| `sfss1000.pfb` | `Sans Serif` | Example |
| `sfsi1000.pfb` | `Sans Serif Slanted` | *Example* |
| `sfsx1000.pfb` | `Sans Serif Bold Extended` | **Example** |
| `sfso1000.pfb` | `Sans Serif Bold Extended Slanted` | ***Example*** |
| `sftt1000.pfb` | `Typewriter` | `Example` |
| `sfit1000.pfb` | `Typewriter Italic` | *`Example`* |
| `sfst1000.pfb` | `Typewriter Slanted` | *`Example`* |
| `sftc1000.pfb` | `Typewriter Caps and Small Caps` | `EXAMPLE` |

Since characters with an octal number below \040 can't be displayed by some postscript interpreters, these characters are repeated in the Computer Modern Fonts with a larger code. Thus, you should use the larger number, where two octal numbers are given (e.g. \000, \241). For example, you better use

```
set xlabel '{/CMR10 \242}'
```

than

```
set xlabel '{/CMR10 \001}'
```

to get an upright uppercase Delta Δ.

| Oct | CMR10 | CMTI10 | CMTT10 | CMMI10 | CMU10 | CMSS10 | CMTEX10 | CMFF10 | CMSY10 | LASY10 | CMEX10-Baseline | | Oct | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| \000, \241 | Γ | *Γ* | Γ | *Γ* | Γ | Γ | · | Γ | − | | | ( | \000, \241 | 0, 161 |
| \001, \242 | Δ | *Δ* | Δ | *Δ* | Δ | Δ | ↓ | Δ | · | ◁ | ) | | \001, \242 | 1, 162 |
| \002, \243 | Θ | *Θ* | Θ | *Θ* | Θ | Θ | *α* | Θ | × | ◁ | | [ | \002, \243 | 2, 163 |
| \003, \244 | Λ | *Λ* | Λ | *Λ* | Λ | Λ | *β* | Λ | ∗ | ▷ | ] | | \003, \244 | 3, 164 |
| \004, \245 | Ξ | *Ξ* | Ξ | *Ξ* | Ξ | Ξ | ∧ | Ξ | ÷ | ▷ | | ⌊ | \004, \245 | 4, 165 |
| \005, \246 | Π | *Π* | Π | *Π* | Π | Π | ¬ | Π | ◇ | | ⌋ | | \005, \246 | 5, 166 |
| \006, \247 | Σ | *Σ* | Σ | *Σ* | Σ | Σ | ∈ | Σ | ± | | | ⌈ | \006, \247 | 6, 167 |
| \007, \250 | Υ | *Υ* | Υ | *Υ* | Υ | Υ | *π* | Υ | ∓ | | ⌉ | | \007, \250 | 7, 168 |
| \010, \251 | Φ | *Φ* | Φ | *Φ* | Φ | Φ | *λ* | Φ | ⊕ | | | { | \010, \251 | 8, 169 |

| Oct | CMR10 | CMTI10 | CMTT10 | CMMI10 | CMU10 | CMSS10 | CMTEX10 | CMFF10 | CMSY10 | LASY10 | CMEX10-Baseline | Oct | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| \011, \252 | Ψ | *Ψ* | Ψ | *Ψ* | Ψ | Ψ | γ | Ψ | ⊖ | | } | \011, \252 | 9, 170 |
| \012, \255 | Ω | *Ω* | Ω | *Ω* | Ω | Ω | δ | Ω | ⊗ | | ⟨ | \012, \255 | 10, 173 |
| \013, \256 | ff | *ff* | ↑ | *α* | ff | ff | ↑ | ff | ⊘ | | ⟩ | \013, \256 | 11, 174 |
| \014, \257 | fi | *fi* | ↓ | *β* | fi | fi | ± | fi | ⊙ | | \| | \014, \257 | 12, 175 |
| \015, \260 | fl | *fl* | ' | *γ* | fl | fl | ⊕ | fl | ◯ | | ‖ | \015, \260 | 13, 176 |
| \016, \261 | ffi | *ffi* | ¡ | *δ* | ffi | ffi | ⊎ | ffi | ∘ | | / | \016, \261 | 14, 177 |
| \017, \262 | ffl | *ffl* | ¿ | *ϵ* | ffl | ffl | ∂ | ffi | • | | \ | \017, \262 | 15, 178 |
| \020, \263 | ı | *ı* | ȷ | *ζ* | ı | ı | ⊂ | ı | ≍ | | ( | \020, \263 | 16, 179 |
| \021, \264 | ȷ | *ȷ* | ȷ | *η* | ȷ | ȷ | ⊃ | ȷ | ≡ | | ) | \021, \264 | 17, 180 |
| \022, \265 | ` | *`* | ` | *θ* | ` | ` | ∩ | ` | ⊆ | | ( | \022, \265 | 18, 181 |
| \023, \266 | ´ | *´* | ´ | *ι* | ´ | ´ | ∪ | ´ | ⊇ | | ) | \023, \266 | 19, 182 |
| \024, \267 | ˇ | *ˇ* | ˇ | *κ* | ˇ | ˇ | ∀ | ˇ | ≤ | | [ | \024, \267 | 20, 183 |
| \025, \270 | ˘ | *˘* | ˘ | *λ* | ˘ | ˘ | ∃ | ˘ | ≥ | | ⌊ | \025, \270 | 21, 184 |
| \026, \271 | ¯ | *¯* | ¯ | *μ* | ¯ | ¯ | ⊗ | ¯ | ≺ | | ⌋ | \026, \271 | 22, 185 |
| \027, \272 | ˚ | *˚* | ˚ | *ν* | ˚ | ˚ | ↮ | ˙ | ≻ | | ⌈ | \027, \272 | 23, 186 |
| \030, \273 | ¸ | *¸* | ¸ | *ξ* | ¸ | ¸ | ← | ¸ | ∼ | | ⌉ | \030, \273 | 24, 187 |
| \031, \274 | ß | *ß* | ß | *π* | ß | ß | → | ß | ≈ | | { | \031, \274 | 25, 188 |
| \032, \275 | æ | *æ* | æ | *ρ* | æ | æ | ≠ | æ | ⊂ | | } | \032, \275 | 26, 189 |
| \033, \276 | œ | *œ* | œ | *σ* | œ | œ | ◇ | œ | ⊃ | | { | \033, \276 | 27, 190 |
| \034, \277 | ø | *ø* | ø | *τ* | ø | ø | ≤ | ø | ≪ | | / | \034, \277 | 28, 191 |
| \035, \300 | Æ | *Æ* | Æ | *υ* | Æ | Æ | ≥ | Æ | ≫ | | \ | \035, \300 | 29, 192 |
| \036, \301 | Œ | *Œ* | Œ | *ϕ* | Œ | Œ | ≡ | Œ | ≺ | | / | \036, \301 | 30, 193 |
| \037, \302 | Ø | *Ø* | Ø | *χ* | Ø | Ø | ∨ | Ø | ≻ | | \ | \037, \302 | 31, 194 |
| \040, \303 | ˝ | *˝* | ␣ | *ψ* | ˝ | ˝ | | ˝ | ← | | ( | \040, \303 | 32, 195 |
| \041 | ! | *!* | ! | *ω* | ! | ! | ! | ! | → | | ) | \041 | 33 |
| \042 | ” | *”* | " | *ε* | ” | ” | " | " | ↑ | | ↑ | \042 | 34 |
| \043 | # | *#* | # | *ϑ* | # | # | # | # | ↓ | | ↓ | \043 | 35 |
| \044 | $ | *£* | $ | *ϖ* | £ | $ | $ | $ | ↔ | | ↔ | \044 | 36 |
| \045 | % | *%* | % | *ϱ* | % | % | % | % | ↗ | | ↗ | \045 | 37 |
| \046 | & | *&* | & | *ς* | & | & | & | & | ↘ | | ↘ | \046 | 38 |
| \047 | ’ | *’* | ’ | *φ* | ’ | ’ | ’ | ’ | ≃ | | ≃ | \047 | 39 |
| \050 | ( | *(* | ( | ← | ( | ( | ( | ( | ⇐ | ˂ | ⇐ | \050 | 40 |
| \051 | ) | *)* | ) | → | ) | ) | ) | ) | ⇒ | ˃ | ⇒ | \051 | 41 |
| \052 | * | ** | * | ↖ | * | * | * | * | ⇑ | ˆ | ⇑ | \052 | 42 |
| \053 | + | *+* | + | ↗ | + | + | + | + | ⇓ | ˇ | ⇓ | \053 | 43 |
| \054 | , | *,* | , | ˂ | , | , | , | ¸ | ⇔ | | ⇔ | \054 | 44 |
| \055 | - | *-* | − | ˃ | - | - | − | - | ↗ | | ↗ | \055 | 45 |
| \056 | . | *.* | . | ▷ | . | . | . | . | ↙ | | ↙ | \056 | 46 |
| \057 | / | */* | / | ◁ | / | / | / | / | ∝ | | \ | \057 | 47 |
| \060 | 0 | *0* | 0 | o | 0 | 0 | 0 | 0 | ′ | ℧ | ( | \060 | 48 |

| Oct | CMR10 | CMTI10 | CMTT10 | CMMI10 | CMU10 | CMSS10 | CMTEX10 | CMFF10 | CMSY10 | LASY10 | CMEX10-Baseline | | Oct | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| \061 | 1 | *1* | 1 | 1 | 1 | 1 | 1 | 1 | $\infty$ | $\bowtie$ | $\big\backslash$ | | \061 | 49 |
| \062 | 2 | *2* | 2 | 2 | 2 | 2 | 2 | 2 | $\in$ | $\square$ | | $\big\lceil$ | \062 | 50 |
| \063 | 3 | *3* | 3 | 3 | 3 | 3 | 3 | 3 | $\ni$ | $\diamond$ | $\big\rceil$ | | \063 | 51 |
| \064 | 4 | *4* | 4 | 4 | 4 | 4 | 4 | 4 | $\triangle$ | | | $\big\lfloor$ | \064 | 52 |
| \065 | 5 | *5* | 5 | 5 | 5 | 5 | 5 | 5 | $\triangledown$ | | $\big\rfloor$ | | \065 | 53 |
| \066 | 6 | *6* | 6 | 6 | 6 | 6 | 6 | 6 | $/$ | | | $\big\vert$ | \066 | 54 |
| \067 | 7 | *7* | 7 | 7 | 7 | 7 | 7 | 7 | $-$ | | $\big\vert$ | | \067 | 55 |
| \070 | 8 | *8* | 8 | 8 | 8 | 8 | 8 | 8 | $\forall$ | | | $\big\lbrace$ | \070 | 56 |
| \071 | 9 | *9* | 9 | 9 | 9 | 9 | 9 | 9 | $\exists$ | | $\big\rbrace$ | | \071 | 57 |
| \072 | : | *:* | : | . | : | : | : | : | $\neg$ | $\sim$ | | $\big\langle$ | \072 | 58 |
| \073 | ; | *;* | ; | , | ; | ; | ; | ; | $\emptyset$ | $\rightsquigarrow$ | $\big\rangle$ | | \073 | 59 |
| \074 | ¡ | *¡* | < | < | ¡ | ¡ | < | ¡ | $\Re$ | $\sqsubset$ | | $\big\{$ | \074 | 60 |
| \075 | = | = | = | / | = | = | = | = | $\Im$ | $\sqsupset$ | $\big\}$ | $\big\vert$ | \075 | 61 |
| \076 | ¿ | *¿* | > | > | ¿ | ¿ | > | ¿ | $\top$ | | | $\big\vert$ | \076 | 62 |
| \077 | ? | *?* | ? | $\star$ | ? | ? | ? | ? | $\bot$ | | $\big\vert$ | | \077 | 63 |
| \100 | @ | *@* | @ | $\partial$ | @ | @ | @ | @ | $\aleph$ | | | $\big\backslash$ | \100 | 64 |
| \101 | A | *A* | A | *A* | A | A | A | A | $\mathcal{A}$ | | $\big\rangle$ | | \101 | 65 |
| \102 | B | *B* | B | *B* | B | B | B | B | $\mathcal{B}$ | | | $\big\vert$ | \102 | 66 |
| \103 | C | *C* | C | *C* | C | C | C | C | $\mathcal{C}$ | | $\big\vert$ | | \103 | 67 |
| \104 | D | *D* | D | *D* | D | D | D | D | $\mathcal{D}$ | | | $\big\langle$ | \104 | 68 |
| \105 | E | *E* | E | *E* | E | E | E | E | $\mathcal{E}$ | | $\big\rangle$ | | \105 | 69 |
| \106 | F | *F* | F | *F* | F | F | F | F | $\mathcal{F}$ | | | $\bigsqcup$ | \106 | 70 |
| \107 | G | *G* | G | *G* | G | G | G | G | $\mathcal{G}$ | | $\bigsqcup$ | | \107 | 71 |
| \110 | H | *H* | H | *H* | H | H | H | H | $\mathcal{H}$ | | | $\oint$ | \110 | 72 |
| \111 | I | *I* | I | *I* | I | I | I | I | $\mathcal{I}$ | | $\oint$ | | \111 | 73 |
| \112 | J | *J* | J | *J* | J | J | J | J | $\mathcal{J}$ | | | $\bigodot$ | \112 | 74 |
| \113 | K | *K* | K | *K* | K | K | K | K | $\mathcal{K}$ | | $\bigodot$ | | \113 | 75 |
| \114 | L | *L* | L | *L* | L | L | L | L | $\mathcal{L}$ | | | $\bigoplus$ | \114 | 76 |
| \115 | M | *M* | M | *M* | M | M | M | M | $\mathcal{M}$ | | $\bigoplus$ | | \115 | 77 |
| \116 | N | *N* | N | *N* | N | N | N | N | $\mathcal{N}$ | | | $\bigotimes$ | \116 | 78 |
| \117 | O | *O* | O | *O* | O | O | O | O | $\mathcal{O}$ | | $\bigotimes$ | | \117 | 79 |
| \120 | P | *P* | P | *P* | P | P | P | P | $\mathcal{P}$ | | | $\sum$ | \120 | 80 |
| \121 | Q | *Q* | Q | *Q* | Q | Q | Q | Q | $\mathcal{Q}$ | | $\prod$ | | \121 | 81 |
| \122 | R | *R* | R | *R* | R | R | R | R | $\mathcal{R}$ | | | $\int$ | \122 | 82 |
| \123 | S | *S* | S | *S* | S | S | S | S | $\mathcal{S}$ | | $\bigcup$ | | \123 | 83 |
| \124 | T | *T* | T | *T* | T | T | T | T | $\mathcal{T}$ | | | $\bigcap$ | \124 | 84 |
| \125 | U | *U* | U | *U* | U | U | U | U | $\mathcal{U}$ | | $\biguplus$ | | \125 | 85 |
| \126 | V | *V* | V | *V* | V | V | V | V | $\mathcal{V}$ | | | $\bigwedge$ | \126 | 86 |
| \127 | W | *W* | W | *W* | W | W | W | W | $\mathcal{W}$ | | $\bigvee$ | | \127 | 87 |
| \130 | X | *X* | X | *X* | X | X | X | X | $\mathcal{X}$ | | | $\sum$ | \130 | 88 |

| Oct | CMR10 | CMTI10 | CMTT10 | CMMI10 | CMU10 | CMSS10 | CMTEX10 | CMFF10 | CMSY10 | LASY10 | CMEX10-Baseline | | Oct | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| \131 | Y | *Y* | Y | *Y* | Y | Y | Y | Y | $\mathcal{Y}$ | | $\prod$ | | \131 | 89 |
| \132 | Z | *Z* | Z | *Z* | Z | Z | Z | Z | $\mathcal{Z}$ | | $\bigcup$ | $\int$ | \132 | 90 |
| \133 | [ | *[* | [ | ♭ | [ | [ | [ | ⌊ | $\cup$ | | | $\bigcap$ | \133 | 91 |
| \134 | “ | “ | \ | ♮ | “ | “ | \ | “ | $\supset$ | | $\biguplus$ | | \134 | 92 |
| \135 | ] | *]* | ] | ♯ | ] | ] | ] | ⌋ | $\uplus$ | | | $\bigwedge$ | \135 | 93 |
| \136 | ˆ | ˆ | ˆ | ⌣ | ˆ | ˆ | ˆ | ˆ | $\wedge$ | | $\bigvee$ | | \136 | 94 |
| \137 | ˙ | ˙ | ˙ | ⌢ | ˙ | ˙ | ˙ | ˙ | $\vee$ | | | $\coprod$ | \137 | 95 |
| \140 | ‘ | ‘ | ‘ | ℓ | ‘ | ‘ | ‘ | ‘ | $\vdash$ | | $\coprod$ | ^ | \140 | 96 |
| \141 | a | *a* | a | *a* | a | a | a | a | $\dashv$ | | | | \141 | 97 |
| \142 | b | *b* | b | *b* | b | b | b | b | $\lfloor$ | | | ⏜ | \142 | 98 |
| \143 | c | *c* | c | *c* | c | c | c | c | $\rfloor$ | | | ⏝ | \143 | 99 |
| \144 | d | *d* | d | *d* | d | d | d | d | $\lceil$ | | ~ | | \144 | 100 |
| \145 | e | *e* | e | *e* | e | e | e | e | $\rceil$ | | | ~ | \145 | 101 |
| \146 | f | *f* | f | *f* | ſ | f | f | f | { | | ⏞ | | \146 | 102 |
| \147 | g | *g* | g | *g* | g | g | g | g | } | | | | \147 | 103 |
| \150 | h | *h* | h | *h* | h | h | h | h | ⟨ | | | ⎡ | \150 | 104 |
| \151 | i | *i* | i | *i* | ı | i | i | ı | ⟩ | | ⎤ | | \151 | 105 |
| \152 | j | *j* | j | *j* | j | j | j | j | \| | | | ⎢ | \152 | 106 |
| \153 | k | *k* | k | *k* | k | k | k | k | ‖ | | ⎥ | | \153 | 107 |
| \154 | l | *l* | l | *l* | l | l | l | l | ↕ | | | ⎣ | \154 | 108 |
| \155 | m | *m* | m | *m* | m | m | m | m | ⇕ | | ⎦ | | \155 | 109 |
| \156 | n | *n* | n | *n* | n | n | n | n | \ | | | { | \156 | 110 |
| \157 | o | *o* | o | *o* | o | o | o | o | ≀ | | } | | \157 | 111 |
| \160 | p | *p* | p | *p* | p | p | p | p | √ | | | √ | \160 | 112 |
| \161 | q | *q* | q | *q* | q | q | q | q | ∐ | | √ | | \161 | 113 |
| \162 | r | *r* | r | *r* | r | r | r | r | ∇ | | | √ | \162 | 114 |
| \163 | s | *s* | s | *s* | s | s | s | s | $\int$ | | √ | √ | \163 | 115 |
| \164 | t | *t* | t | *t* | t | t | t | t | ⊔ | | √ | √ | \164 | 116 |
| \165 | u | *u* | u | *u* | u | u | u | u | ⊓ | | ‖ | ⌜ | \165 | 117 |
| \166 | v | *v* | v | *v* | v | v | v | v | ⊑ | | | ⌜ | \166 | 118 |
| \167 | w | *w* | w | *w* | w | w | w | w | ⊒ | | ‖ | | \167 | 119 |
| \170 | x | *x* | x | *x* | x | x | x | x | § | | | ↑ | \170 | 120 |
| \171 | y | *y* | y | *y* | y | y | y | y | † | | ↓ | | \171 | 121 |
| \172 | z | *z* | z | *z* | z | z | z | z | ‡ | | | ⏜ | \172 | 122 |
| \173 | – | – | { | ♮ | – | – | { | – | ¶ | | ⏝ | | \173 | 123 |
| \174 | — | — | \| | ♩ | — | — | \| | — | ♣ | | ⏟ | ⏜ | \174 | 124 |
| \175 | ″ | ″ | } | ♀ | ″ | ″ | } | ˝ | ♢ | | | | \175 | 125 |
| \176 | ~ | ~ | ~ | → | ~ | ~ | ~ | ~ | ♡ | | | ⇑ | \176 | 126 |
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