

L^AT_EX support for Fedra Serif Pro

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v1.0 – 2015/12/31

Abstract

This document describes the fedraserif package, which provides L^AT_EX support for the commercial Fedra Serif Pro fonts in both text and math mode.

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1 Overview

The fedraserif package provides L^AT_EX support for the commercial Fedra[®] Serif Pro fonts¹ from Typotheque². You can load this package by adding

```
\usepackage[options]{fedraserif}
```

to the preamble of your document. If no options are specified, this will change both the text font and the math font to Fedra Serif A; use the option `variant=B` to select Fedra Serif B. For the available options, see Section 3.

Acknowledgements

This package is heavily influenced by the MinionPro package, developed by Achim Blumensath, Andreas Böhmann and Michael Zedler, as well as the lucimatx package by Walter Schmidt. Additionally, I am indebted to Eddie Kohler for creating the LCDF typetools.

2 Interferences with other packages

In order to use Fedra Serif as a math font, you need to have the fdsymbol package (version 0.7 or higher) installed. Apart from fdsymbol, the fedraserif package automatically loads the packages textcomp and amsmath. Additionally, the packages

¹Fedra is a registered trademark of Typotheque VOF.

²<http://www.typotheque.com/fonts/>

Table 1: Summary of options

Key	Values	Section
<code>boldweight</code>	Medium*, Bold, auto	4.3
<code>fedrabb</code>	true, false*	5.3
<code>footnotemarks</code>	true, false*	4.6
<code>figures</code>	lining*(lf), text (osf)	4.5
<code>math</code>	true*, false	5
<code>math-style</code>	tex*, iso, french	5.1
<code>normalweight</code>	Book*, Demi, auto	4.3
<code>stdmathdigits</code>	true, false*	5.2
<code>variant</code>	A*, B	4.1

`fontaxes` and `pifont` package are loaded if present in your \LaTeX installation. If you want to pass options to these packages, you can either load these packages beforehand, or you can include the options in the `\documentclass` command. Unless the option `math=false` is used, the `fedraserif` package is *not* compatible with `amssymb` and `amsfonts` (since `fdsymbol` is not).

3 Options

All package options are set using a $\langle key \rangle = \langle value \rangle$ syntax. Boolean options accept true and false as values, and setting a Boolean key without a value is equivalent to setting it to true. Table 1 lists all option keys of the `fedraserif` package with their possible values; values that are marked with an asterisk correspond to the default behaviour of the package.

4 Font selection

4.1 Variants

Fedra Serif Pro comes in two variants, licensed separately: *Fedra Serif A* has a lower contrast and shorter ascenders, which makes it a good choice for small sizes, whereas *Fedra Serif B* features an increased contrast and longer ascenders. To select one variant, use the `variant` key: setting `variant=A` will select Fedra Serif A (the default), while `variant=B` will select Fedra Serif B.

Table 2: Summary of font weights

Weight	Series	Example
Book	sl	A Quick Brown Fox Jumps Over The Lazy Dog.
Demi	md	A Quick Brown Fox Jumps Over The Lazy Dog.
Medium	sb	A Quick Brown Fox Jumps Over The Lazy Dog.
Bold	ub	A Quick Brown Fox Jumps Over The Lazy Dog.

4.2 Encodings

The package currently supports the OT1, T1, LY1, QX and T5 encodings for typesetting text with Latin characters, as well as the TS1 encoding for typesetting text symbols. For typesetting text with accented characters, it is strongly recommended to change the default font encoding from OT1 to T1 or one of the other encodings. This can be achieved by putting `\usepackage[T1]{fontenc}` in the preamble of your document.

4.3 Weights

All fonts of the Fedra Serif Pro family come in four weights, which are (in increasing order) Book, Demi, Medium and Bold, shown in Table 2. Of these, Book and Demi can be used as the standard text font, while Medium and Bold can be used for bold text. The option keys `normalweight` and `boldweight` allow to control which weights are used for the standard L^AT_EX font series `m` and `b` (or `bx`), selected by `\mdseries` and `\bfseries`, respectively. For example, to use the Demi weight as the standard text font, use the option `normalweight=Demi`. By default, only the Book and the Medium weights are used. Additionally, both keys can be set to the value `auto`, which selects a weight depending on the font size (Book and Medium for normal and large sizes, Demi and Bold for small sizes). Independently of these options, all weights can be accessed using the `\fontseries` command. For instance, the Demi weight can be accessed using the command `\fontseries{md}`.³

4.4 Shapes

In addition to the normal small caps shapes `sc` and `scit`, there are letterspaced versions `ssc` and `sscit`. Moreover, italic shapes with *swash capitals* are accessible via the `sw`, `scsw` and `sscs` shapes (see Table 3).

If the `fontaxes` package is available, you can use the commands `\sscshape` and `\textssc{<text>}` to switch to letterspaced small caps and the commands `\swshape` and `\textsw{<text>}` to switch to swash capitals.

³Font selection commands like `\fontseries` only take effect after a subsequent call to `\selectfont`.

Table 3: Summary of font shapes

Shape	Example
n	A Quick Brown Fox Jumps Over The Lazy Dog.
it	<i>A Quick Brown Fox Jumps Over The Lazy Dog.</i>
sc	A QUICK BROWN FOX JUMPS OVER THE LAZY DOG.
ssc	A QUICK BROWN FOX JUMPS OVER THE LAZY DOG.
scit	<i>A QUICK BROWN FOX JUMPS OVER THE LAZY DOG.</i>
sscit	<i>A QUICK BROWN FOX JUMPS OVER THE LAZY DOG.</i>
sw	<i>A Quick Brown Fox Jumps Over The Lazy Dog.</i>
scsw	<i>A QUICK BROWN FOX JUMPS OVER THE LAZY DOG.</i>
sscs	<i>A QUICK BROWN FOX JUMPS OVER THE LAZY DOG.</i>

Table 4: Summary of figure versions

	Lining figures	Text figures
Proportional	0123456789	o123456789
Tabular	0123456789	o123456789

4.5 Figures

Fedra Serif Pro offers four main figure versions (see 4). On the one hand, one can choose between *lining figures* and *text figures*, also known as *old-style figures*. On the other hand, one can choose between *proportional figures* and *tabular figures*.

By default, proportional lining figures are used throughout the document. If you want to use text figures instead, use the option `figures=text` or `figures=osf`.

Assuming that the `fontaxes` package is installed on your system, you can use the command `\figureversion` to switch between different figure versions inside the document. Possible arguments are `text` or `osf` for text figures, `lining` or `lf` for lining figures, `tabular` or `tab` for tabular figures, and `proportional` or `prop` for proportional figures. Note that you can combine several arguments. For example, the command `\figureversion{osf, tabular}` selects tabular text figures.

Small and slanted fractions are fractions with a height matching the font's body size; they can be accessed via:

$$\begin{array}{ll} \backslash\text{smallfrac}\{\langle\text{numerator}\rangle\}\{\langle\text{denominator}\rangle\} & \frac{3}{17} \\ \backslash\text{slantfrac}\{\langle\text{numerator}\rangle\}\{\langle\text{denominator}\rangle\} & \frac{3}{17} \end{array}$$

Note that only figures can be used for `\langlenumerator\rangle` and `\langledenominator\rangle`.

Finally, Fedra Serif Pro offers so-called bullet figures, which are enclosed by a circle; they can be accessed via:

`\openbullet{⟨number⟩}` ① ②
`\closedbullet{⟨number⟩}` ⑤ ⑥

As for small and slanted fractions, only figures can be used for `⟨number⟩`.

4.6 Footnotes

By setting the option `footnotemarks`, footnote marks are set using special characters designed for this purpose, i.e. ^{1,a} instead of ^{1,a}. However, this only works for footnote marks that consist of figures and the lowercase letters a–z.

4.7 Dingbats

Fedra Serif Pro provides a large set of ornamental characters, which can be typeset using the following command:

`\ding{⟨number⟩}`

More commands are made available by the `pifont` package, which is automatically loaded if present. The available glyphs are listed in Table 5.

4.8 Additional notes

Fedra Serif Pro implements a large subset of the glyphs made available by the TS1 encoding. However, the following glyphs are missing:

<code>\textdblhyphen</code>	<code>\textdivorced</code>	<code>\textdied</code>
<code>\textleaf</code>	<code>\textmarried</code>	<code>\textmusicalnote</code>
<code>\textdblhyphenchar</code>	<code>\textdollaroldstyle</code>	<code>\textcentoldstyle</code>
<code>\textguarani</code>	<code>\textrecipe</code>	<code>\textpertenthousand</code>
<code>\textpilcrow</code>	<code>\textbaht</code>	<code>\textdiscount</code>
<code>\textlquill</code>	<code>\textrquill</code>	<code>\textcopyleft</code>
<code>\textreferencemark</code>		

In addition to the monetary symbols defined by the TS1 encoding, the following currency symbols are available:

₧	<code>\textcruzeiro</code>	₣	<code>\textfranc</code>	₭	<code>\textmill</code>
₪	<code>\textpeseta</code>	₮	<code>\textrupee</code>	₯	<code>\textsheqel</code>
€	<code>\textkip</code>	₴	<code>\texttugrik</code>	₺	<code>\texthryvnia</code>

5 Math support

By default, we change the math font to Fedra Serif Pro with mathematical symbols taken from `FdSymbol`. To disable this behaviour, use the option `math=false`. Note

Table 5: Dingbats available with the fedraserif package

number	glyph	number	glyph	number	glyph	number	glyph
100	·	128	⓪	156	☎	184	·
101	•	129	Ⓢ	157	📄	185	·
102	◦	130	Ⓣ	158	🏠	186	*
103	▪	131	ⓧ	159	📁	187	*
104	◆	132	Ⓜ	160	🌐	188	*
105	■	133	☺	161	✍	189	*
106	□	134	★	162	🕒	190	⋯
107	■	135	⦿	163	📋	191	⦿
108	□	136	→	164	📧	192	—
109	▶	137	←	165	🛒	193	—
110	◀	138	↑	166	⬇	194	—
111	▷	139	↓	167	🏠	195	—
112	◁	140	↗	168	🕯	196	—
113	▶	141	↖	169	🕯	197	—
114	◀	142	↙	170	🕯	198	—
115	▷	143	↘	171	📄	199	—
116	◁	144	👉	172	📄	200	—
117	▶	145	👈	173	☀	201	—
118	◀	146	👉	174	☀	202	▲
119	▷	147	👈	175	☀	203	+
120	◁	148	👉	176	☺	204	★
121	●	149	👉	177	~	205	*
122	○	150	✓	178	~	206	▲
123	●	151	□	179	~	207	✦
124	◎	152	☑	180	~	208	★
125	◎	153	☒	181	—	209	★
126	♥	154	☒	182	—	210	✦
127	♡	155	📄	183	—		

Table 6: The different styles for letters in math mode

math-style	example
tex	$a, b, \dots, A, B, \dots, \alpha, \beta, \dots, \Gamma, \Delta, \dots$
iso	$a, b, \dots, A, B, \dots, \alpha, \beta, \dots, \Gamma, \Delta, \dots$
french	$a, b, \dots, A, B, \dots, \alpha, \beta, \dots, \Gamma, \Delta, \dots$

that all other options described in this section have no effect if math support is disabled.

5.1 Letters

In $\text{T}_{\text{E}}\text{X}$ and $\text{L}^{\text{A}}\text{T}_{\text{E}}\text{X}$, uppercase Greek letters are traditionally set upright in math mode, even when they are used as variables. This differs from the ISO standards ISO31-0:1992 to ISO31-13:1992, which mandate italics in this case. While the package employs the $\text{T}_{\text{E}}\text{X}$ tradition by default, you can select the ISO behaviour by setting the option `math-style=iso`. Independently of this option, you can always select upright and italic greek letters using the commands `\upalpha`, `\italpha`, `\upGamma`, `\itGamma`, etc. Additionally, the `math-style` key can take the value `french`, in which case all Greek and uppercase roman letters are typeset upright. For an illustration of the differences between the three values for `math-style`, see Table 6.

The `fedraserif` package provides all letters available in math mode with the Computer Modern fonts, with the exception of `\varpi` and `\varrho`, which have the same shape as `\pi` and `\rho`, respectively. Additionally, the following letters and letter-like symbols are can be typeset:

β	<code>\varbeta</code> ⁴	κ	<code>\varkappa</code> ⁴	\digamma	<code>\digamma</code> ⁴
ε	<code>\backepsilon</code> ⁴	ζ	<code>\varbackepsilon</code> ⁴	\hslash	<code>\hslash</code>
λ	<code>\lambdabar</code>	λ	<code>\lambdaslash</code>	\eth	<code>\eth</code> ⁴
0	<code>\slashedzero</code>	\mho	<code>\mho</code>	ℓ	<code>\upeell</code>
\hbar	<code>\uphbar</code>	\beth	<code>\beth</code>	λ	<code>\gimel</code>
\daleth	<code>\daleth</code>				

5.2 Digits

By default, digits in math mode are typeset in the default figure version for text mode (as selected by the `figures` key). To use lining figures in math mode even if `figures=text` is active, set the option `stdmathdigits`.

⁴The shape of the symbol is different if the option `math-style=french` is selected. Upright and italic shapes are also available directly via the commands `\up<cmd>` and `\it<cmd>`, respectively.

Apart from the standard math versions `normal` and `bold`, the package introduces two new math versions `tabular` and `boldtabular`, in which digits are typeset as tabular figures.

5.3 Blackboard characters

Fedra Serif Pro has a limited set of blackboard characters, namely \mathbb{N} , \mathbb{Z} , \mathbb{Q} , \mathbb{R} , \mathbb{C} , \mathbb{k} and \mathbb{l} . To use these characters for the math blackboard alphabet `\mathbb{b}`, set the option `fedrabb`. If this option is not selected, the AMS blackboard bold font is used instead, which has the advantage that all uppercase roman letters are available.

6 NFSS classification

Table 7 lists all fonts made available with this package. Parenthesised combinations are provided via substitutions.

7 Implementation

7.1 Options

We use `xkeyval`'s key mechanism to declare all options.

```

1 (*package)
2 \RequirePackage{xkeyval}
3 \newcommand*\fdrsf@boolkey[2]{%
4   \define@boolkey{fedraserif.sty}{fdrsf@}[#1][true]{#2}%
5 }
6 \newcommand*\fdrsf@choicekey[3]{%
7   \define@choicekey*{fedraserif.sty}{#1}[\@tempa\@tempb]{#2}{#3}%
8 }

```

Font selection

The package `fedraserif-fd` adapts the font definitions to the requested font set (see Section 9). So we simply pass on the relevant options. Additional care has to be taken to pass the right options to `fdsymbol`.

```

9 \fdrsf@choicekey{normalweight}{book,demi,auto}{%
10   \PassOptionsToPackage{normalweight=#1}{fedraserif-fd}%
11   \ifcase\@tempb\relax
12     \PassOptionsToPackage{normalweight=book}{fdsymbol}%
13   \or
14     \PassOptionsToPackage{normalweight=regular}{fdsymbol}%
15   \or

```

Table 7: NFSS classification

Encoding	Family	Series	Shape
OT1, T1, TS1, LY1, QX, T5	FedraSerifProA-LF, FedraSerifProA-OsF, FedraSerifProA-TLF, FedraSerifProA-TOsF, FedraSerifProB-LF, FedraSerifProB-OsF, FedraSerifProB-TLF, FedraSerifProB-TOsF	sl, m, md, b (bx), sb, ub	n, it (sl), sw, sc, scit (scsl), scsw, ssc, sscit (sscsl), sscsw
OML	FedraSerifProA-TOsF (FedraSerifProA-LF, FedraSerifProA-OsF, FedraSerifProA-TLF), FedraSerifProB-TOsF (FedraSerifProB-LF, FedraSerifProB-OsF, FedraSerifProB-TLF)	sl, m, md, b (bx), sb, ub	n, it
U	FedraSerifProA-Extra, FedraSerifProB-Extra	sl, m, md, b (bx), sb, ub	n, it (sl)
U	FedraSerifProA-Pi, FedraSerifProB-Pi	m, md, b (sb, bx), ub	n
U	FedraSerifProA-BB, FedraSerifProB-BB	m	n

```

16 \PassOptionsToPackage{normalweight=auto}{fdsymbol}%
17 \fi
18 }
19 \fdrsf@choicekey{boldweight}{medium,bold,auto}{%
20 \PassOptionsToPackage{boldweight=#1}{fedraserif-fd}%
21 \PassOptionsToPackage{boldweight=#1}{fdsymbol}%
22 }

```

The next option toggles the math font setup.

```

23 \fdrsf@boolkey{math}{}

```

For compatibility with older versions of this package, we also define a dual option to disable math support.

```

24 \fdrsf@boolkey{nomath}{}
25 \iffdrsf@nomath\fdrsf@mathfalse\else\fdrsf@mathtrue\fi%
26 }

```

Variant and figure style

```

27 \newcommand\fdrsf@family{FedraSerifProA}
28 \newcommand\fdrsf@textfig{LF}
29 \newcommand\fdrsf@mathfig{\fdrsf@textfig}
30 \newcommand\fdrsf@textfamily{\fdrsf@family-\fdrsf@textfig}
31 \newcommand\fdrsf@mathfamily{\fdrsf@family-\fdrsf@mathfig}
32 \newcommand\fdrsf@mathtfamily{\fdrsf@family-T\fdrsf@mathfig}
33 \newcommand\fdrsf@pifamily{\fdrsf@family-Pi}
34 \newcommand\fdrsf@mathshape{it}

35 \fdrsf@choicekey{variant}{a,b,auto}{%
36 \ifcase\@tempb\relax
37 \renewcommand\fdrsf@family{FedraSerifProA}%
38 \or
39 \renewcommand\fdrsf@family{FedraSerifProB}%
40 \PassOptionsToPackage{largedelims}{fdsymbol}%
41 \or
42 \PackageWarning{fedraserif.sty}{Option ‘variant=auto’ is deprecated and has no effect.}%
43 \fi
44 }

45 \fdrsf@choicekey{figures}{text,osf,lining,lf}{%
46 \ifcase\@tempb\relax
47 \renewcommand\fdrsf@textfig{OsF}%
48 \or
49 \renewcommand\fdrsf@textfig{OsF}%
50 \or
51 \renewcommand\fdrsf@textfig{LF}%
52 \or
53 \renewcommand\fdrsf@textfig{LF}%

```

```

54 \fi
55 }
56 \fdrsf@boolkey{stdmathdigits}{%
57 \iffdrsf@stdmathdigits
58 \renewcommand\fdrsf@mathfig{LF}%
59 \fi
60 }

```

Math styles

```

61 \newif\iffdrsf@greek@upper@upright
62 \newif\iffdrsf@greek@lower@upright
63 \fdrsf@choicekey{math-style}{tex,iso,french}{%
64 \ifcase\@tempb\relax
65 \fdrsf@greek@upper@uprighttrue
66 \fdrsf@greek@lower@uprightfalse
67 \or
68 \fdrsf@greek@upper@uprightfalse
69 \fdrsf@greek@lower@uprightfalse
70 \or
71 \fdrsf@greek@upper@uprighttrue
72 \fdrsf@greek@lower@uprighttrue
73 \renewcommand\fdrsf@mathshape{n}
74 \fi
75 }

```

Other options

This options redefines the blackboard bold alphabet to use Fedra Serif's blackboard letters.

```

76 \fdrsf@boolkey{fedrabb}{%
77 \iffdrsf@fedrabb
78 \renewcommand\fdrsf@load@bb{%
79 \DeclareMathAlphabet\mathbb{U}{\fdrsf@family-BB}{m}{n}%
80 \renewcommand\Bbbk{\mathbb{k}}%
81 }%
82 \fi
83 }
84 \newcommand\fdrsf@load@bb{}

```

This option allows to use superior figures for footnote marks. If possible, we use the commands `\deffootnotemark` and `\deffootnote` provided by the KOMA-Script classes to change the formatting of footnote marks. Otherwise, we need to redefine `\@makefnmark`.

```

85 \fdrsf@boolkey{footnotemarks}{%
86 \iffdrsf@footnotemarks
87 \ifundefined{deffootnotemark}{%

```

```

88     \def\@makefnmark{%
89         \begingroup
90         \usefont{U}{\fdrsf@family-Extra}{m}{n}%
91         \@thefnmark\kern0.1em%
92     \endgroup
93     }%
94 }{%
95     \def\footnotemark{%
96         \begingroup
97         \usefont{U}{\fdrsf@family-Extra}{m}{n}%
98         \thefootnotemark
99     \endgroup
100     }%
101 }%
102 \@ifundefined{deffootnote}{}{%
103     \deffootnote[1em]{1.5em}{1em}{%
104         \begingroup
105         \usefont{U}{\fdrsf@family-Extra}{m}{n}%
106         \thefootnotemark\kern0.1em%
107     \endgroup
108     }%
109 }%
110 \fi
111 }

```

Defaults

```

112 \ExecuteOptionsX{math,math-style=tex}
113 \ProcessOptionsX\relax

```

7.2 Font selection

```

114 \RequirePackage[scale=0.9]{fedraserif-fd}
115 \@ifpackageloaded{textcomp}{}{\RequirePackage{textcomp}}
116 \renewcommand\rmdefault{\fdrsf@textfamily}
117 \@for\fdrsf@fam:=FedraSerifProA,FedraSerifProB\do{%
118     \@for\fdrsf@fig:=LF,TLF,OsF,TOf\do{%
119         \DeclareEncodingSubset{TS1}{\fdrsf@fam-\fdrsf@fig}{1}%
120     }%
121 }

```

In order to accomodate ligatures and glyph variants, we had to remove some glyphs from the standard encodings, but most of them can still be accessed through the TS1 encoding.

```

122 \AtBeginDocument{
123     \UndeclareTextCommand{\textcompwordmark}{T1}

```

```

124 \UndeclareTextCommand{\textvisiblespace}{T1}
125 \UndeclareTextCommand{\textperthousand}{T1}
126 \UndeclareTextCommand{\textpertenthousand}{T1}
127 \UndeclareTextCommand{\textsterling}{T1}
128 \UndeclareTextCommand{\textsection}{T1}
129 \UndeclareTextCommand{\textmu}{QX}
130 \UndeclareTextCommand{\texteuro}{QX}
131 \UndeclareTextCommand{\textEuro}{QX}
132 \let\textEuro\texteuro
133 \UndeclareTextCommand{\textdagger}{QX}
134 \UndeclareTextCommand{\textdaggerdbl}{QX}
135 \UndeclareTextCommand{\textdegree}{QX}
136 \UndeclareTextCommand{\textsection}{QX}
137 \UndeclareTextCommand{\textregistered}{QX}
138 \UndeclareTextCommand{\copyright}{QX}
139 \let\copyright\textcopyright
140 \UndeclareTextCommand{\textdiv}{QX}
141 \UndeclareTextCommand{\textminus}{QX}
142 \UndeclareTextCommand{\texttimes}{QX}
143 \UndeclareTextCommand{\textpm}{QX}
144 \UndeclareTextCommand{\textbullet}{QX}
145 \UndeclareTextCommand{\textcurrency}{QX}
146 \UndeclareTextCommand{\textperthousand}{QX}
147 \UndeclareTextCommand{\textanglearc}{QX}
148 \UndeclareTextCommand{\textvisiblespace}{T5}

```

Additional currency symbols are stored in empty slots of the TS1 encoding.

```

149 \DeclareTextSymbol{\textcruzeiro}{TS1}{192}
150 \DeclareTextSymbol{\textfranc}{TS1}{193}
151 \DeclareTextSymbol{\textmill}{TS1}{194}
152 \DeclareTextSymbol{\textpeseta}{TS1}{195}
153 \DeclareTextSymbol{\textrupee}{TS1}{196}
154 \DeclareTextSymbol{\textsheqel}{TS1}{197}
155 \DeclareTextSymbol{\textkip}{TS1}{198}
156 \DeclareTextSymbol{\texttugrik}{TS1}{199}
157 \DeclareTextSymbol{\texthryvnia}{TS1}{200}
158 \DeclareTextSymbolDefault{\textcruzeiro}{TS1}
159 \DeclareTextSymbolDefault{\textfranc}{TS1}
160 \DeclareTextSymbolDefault{\textmill}{TS1}
161 \DeclareTextSymbolDefault{\textpeseta}{TS1}
162 \DeclareTextSymbolDefault{\textrupee}{TS1}
163 \DeclareTextSymbolDefault{\textsheqel}{TS1}
164 \DeclareTextSymbolDefault{\textkip}{TS1}
165 \DeclareTextSymbolDefault{\texttugrik}{TS1}
166 \DeclareTextSymbolDefault{\texthryvnia}{TS1}
167 }

```

The font selection commands such as `\figureversion`, `\textsw`, and `\textssc` are provided by the `fontaxes` package.

```
168 \IfFileExists{fontaxes.sty}{
169   \RequirePackage{fontaxes}[2007/03/31]
170   \let\oldstylenums\textfigures
171 }{}
```

7.3 Math font setup

We use `FdSymbol` for most mathematical symbols.

```
172 \iffdrs@math
173   \RequirePackage[scale=0.9]{fdsymbol}[2011/11/01]
```

Some math symbols are taken from the text font by `fdsymbol`. Use the correct math figure version for these.

```
174   \renewcommand\fdsy@text[1]{%
175     \ifx\fdsy@bold\math@version
176       \text{\usefont{T1}{\fdrs@mathfamily}{b}{n}#1}%
177     \else
178       \text{\usefont{T1}{\fdrs@mathfamily}{m}{n}#1}%
179     \fi
180   }
```

Redefine the standard math versions normal and bold.

```
181   \DeclareSymbolFont{operators}{T1}{\fdrs@mathfamily}{m}{n}
182   \SetSymbolFont{operators}{bold}{T1}{\fdrs@mathfamily}{b}{n}
183   \DeclareSymbolFont{letters}{OML}{\fdrs@family-T0sF}{m}{\fdrs@mathshape}
184   \SetSymbolFont{letters}{bold}{OML}{\fdrs@family-T0sF}{b}{\fdrs@mathshape}
185   \DeclareMathAlphabet{\mathrm}{T1}{\fdrs@mathfamily}{m}{n}
186   \SetMathAlphabet{\mathrm}{bold}{T1}{\fdrs@mathfamily}{b}{n}
187   \DeclareMathAlphabet{\mathit}{T1}{\fdrs@mathfamily}{m}{it}
188   \SetMathAlphabet{\mathit}{bold}{T1}{\fdrs@mathfamily}{b}{it}
189   \DeclareMathAlphabet{\mathbf}{T1}{\fdrs@mathfamily}{b}{n}
```

Extra math versions `tabular` and `bolddtabular`, which use `tabular` figures instead of proportional ones. These math versions can be useful in tables.

```
190   \DeclareMathVersion{tabular}
191   \SetSymbolFont{operators}{tabular}{T1}{\fdrs@mathtfamily}{m}{n}
192   \SetMathAlphabet{\mathrm}{tabular}{T1}{\fdrs@mathtfamily}{m}{n}
193   \SetMathAlphabet{\mathit}{tabular}{T1}{\fdrs@mathtfamily}{m}{it}
194   \SetMathAlphabet{\mathbf}{tabular}{T1}{\fdrs@mathtfamily}{b}{n}
195   \DeclareMathVersion{bolddtabular}
196   \SetSymbolFont{operators}{bolddtabular}{T1}{\fdrs@mathtfamily}{b}{n}
197   \SetSymbolFont{letters}{bolddtabular}{OML}{\fdrs@family-T0sF}{b}{\fdrs@mathshape}
198   \SetMathAlphabet{\mathrm}{bolddtabular}{T1}{\fdrs@mathtfamily}{b}{n}
199   \SetMathAlphabet{\mathit}{bolddtabular}{T1}{\fdrs@mathtfamily}{b}{it}
200   \SetMathAlphabet{\mathbf}{bolddtabular}{T1}{\fdrs@mathtfamily}{b}{n}
```

```

201 \DeclareMathAccent{\grave}{\mathalpha}{operators}{"00}
202 \DeclareMathAccent{\acute}{\mathalpha}{operators}{"01}
203 \DeclareMathAccent{\hat}{\mathalpha}{operators}{"02}
204 \DeclareMathAccent{\tilde}{\mathalpha}{operators}{"03}
205 \DeclareMathAccent{\ddot}{\mathalpha}{operators}{"04}
206 \DeclareMathAccent{\mathring}{\mathalpha}{operators}{"06}
207 \DeclareMathAccent{\check}{\mathalpha}{operators}{"07}
208 \DeclareMathAccent{\breve}{\mathalpha}{operators}{"08}
209 \DeclareMathAccent{\bar}{\mathalpha}{operators}{"09}
210 \DeclareMathAccent{\dot}{\mathalpha}{operators}{"0A}
211 \let\hbar\undefined
212 \DeclareMathSymbol{\hbar}{\mathord}{letters}{"AE}
213 \DeclareMathSymbol{\uphbar}{\mathord}{letters}{"B6}
214 \DeclareMathSymbol{\partial}{\mathord}{letters}{"40}
215 \DeclareMathSymbol{\ell}{\mathord}{letters}{"60}
216 \DeclareMathSymbol{\upeell}{\mathord}{letters}{"B9}
217 \DeclareMathSymbol{\slashedzero}{\mathord}{letters}{"B8}
218 \let\mho\undefined
219 \DeclareMathSymbol{\mho}{\mathord}{letters}{"BA}
220 \DeclareMathSymbol{\nabla}{\mathord}{letters}{"BB}
221 \DeclareRobustCommand{\lambdabar}{\middlebar\lambda}
222 \DeclareRobustCommand{\lambdaslash}{\middleslash\lambda}

```

Execute the hook set up above to redefine the mathbb alphabet.

```

223 \fdrsf@load@bb

```

7.4 Greek and Hebrew letters

We provide three math-mode commands for each Greek letter: for italic, upright and the default.

```

224 \newcommand*\fdrsf@greek@capital}[3]{
225   \expandafter\DeclareMathSymbol%
226     \expandafter{\csname it#1\endcsname}{\mathord}{letters}{#2}
227   \expandafter\DeclareMathSymbol%
228     \expandafter{\csname up#1\endcsname}{\mathord}{letters}{#3}
229   \iffdrsf@greek@upper@upright
230     \expandafter\let\csname #1\expandafter\endcsname\csname up#1\endcsname
231   \else
232     \expandafter\let\csname #1\expandafter\endcsname\csname it#1\endcsname
233   \fi
234 }
235 \newcommand*\fdrsf@greek@letter}[3]{
236   \expandafter\DeclareMathSymbol%
237     \expandafter{\csname it#1\endcsname}{\mathord}{letters}{#2}
238   \expandafter\DeclareMathSymbol%

```



```

239     \expandafter{\csname up#1\endcsname}{\mathord}{letters}{#3}
240     \iffdrsf@greek@lower@upright
241     \expandafter\let\csname #1\expandafter\endcsname\csname up#1\endcsname
242     \else
243     \expandafter\let\csname #1\expandafter\endcsname\csname it#1\endcsname
244     \fi
245 }
246 \fdrsf@greek@capital{\Gamma}{00}{80}
247 \fdrsf@greek@capital{\Delta}{01}{81}
248 \fdrsf@greek@capital{\Theta}{02}{82}
249 \fdrsf@greek@capital{\Lambda}{03}{83}
250 \fdrsf@greek@capital{\Xi}{04}{84}
251 \fdrsf@greek@capital{\Pi}{05}{85}
252 \fdrsf@greek@capital{\Sigma}{06}{86}
253 \fdrsf@greek@capital{\Upsilon}{07}{87}
254 \fdrsf@greek@capital{\Phi}{08}{88}
255 \fdrsf@greek@capital{\Psi}{09}{89}
256 \fdrsf@greek@capital{\Omega}{0A}{8A}
257 \fdrsf@greek@letter{\alpha}{0B}{8B}
258 \fdrsf@greek@letter{\beta}{0C}{8C}
259 \fdrsf@greek@letter{\gamma}{0D}{8D}
260 \fdrsf@greek@letter{\delta}{0E}{8E}
261 \fdrsf@greek@letter{\epsilon}{0F}{8F}
262 \fdrsf@greek@letter{\zeta}{10}{90}
263 \fdrsf@greek@letter{\eta}{11}{91}
264 \fdrsf@greek@letter{\theta}{12}{92}
265 \fdrsf@greek@letter{\iota}{13}{93}
266 \fdrsf@greek@letter{\kappa}{14}{94}
267 \fdrsf@greek@letter{\lambda}{15}{95}
268 \fdrsf@greek@letter{\mu}{16}{96}
269 \fdrsf@greek@letter{\nu}{17}{97}
270 \fdrsf@greek@letter{\xi}{18}{98}
271 \fdrsf@greek@letter{\pi}{19}{99}
272 \fdrsf@greek@letter{\rho}{1A}{9A}
273 \fdrsf@greek@letter{\sigma}{1B}{9B}
274 \fdrsf@greek@letter{\tau}{1C}{9C}
275 \fdrsf@greek@letter{\upsilon}{1D}{9D}
276 \fdrsf@greek@letter{\phi}{1E}{9E}
277 \fdrsf@greek@letter{\chi}{1F}{9F}
278 \fdrsf@greek@letter{\psi}{20}{A0}
279 \fdrsf@greek@letter{\omega}{21}{A1}
280 \fdrsf@greek@letter{\varepsilon}{22}{A2}
281 \fdrsf@greek@letter{\vartheta}{23}{A3}
282 \fdrsf@greek@letter{\varpi}{19}{99}
283 \fdrsf@greek@letter{\varrho}{1A}{9A}

```

```

284 \fdrsf@greek@letter{varsigma}{26}{A6}
285 \fdrsf@greek@letter{varphi}{27}{A7}

```

Some of the following symbols are not really Greek letters, but they are treated in the same way.

```

286 \fdrsf@greek@letter{varbeta}{A8}{B0}
287 \fdrsf@greek@letter{varkappa}{A9}{B1}
288 \fdrsf@greek@letter{digamma}{AA}{B2}
289 \fdrsf@greek@letter{backepsilon}{AB}{B3}
290 \fdrsf@greek@letter{varbackepsilon}{AC}{B4}
291 \fdrsf@greek@letter{eth}{AD}{B5}

```

Hebrew letters are provided by `FdSymbol`, but we replace them with their Fedra counterparts.

```

292 \DeclareMathSymbol{\aleph}{\mathord}{letters}{BC}
293 \DeclareMathSymbol{\beth}{\mathord}{letters}{BD}
294 \DeclareMathSymbol{\gimel}{\mathord}{letters}{BE}
295 \DeclareMathSymbol{\daleth}{\mathord}{letters}{BF}
296 \fi

```

7.5 Dingbats

We redefine some of the commands provided by the `pifont` package to replace Zapf Dingbats by Fedra Serif's dingbats font.

```

297 \IfFileExists{pifont.sty}{
298   \RequirePackage{pifont}[2005/04/12]
299   \renewcommand{\ding}{\Pisymbol{\fdrsf@pifamily}}
300   \renewcommand{\dingfill}{\Pifill{\fdrsf@pifamily}}
301   \renewcommand{\dingline}{\Piline{\fdrsf@pifamily}}
302   \renewenvironment{dinglist}[1]{\begin{Pilist}{\fdrsf@pifamily}{##1}}%
303     {\end{Pilist}}
304   \renewenvironment{dingautolist}[1]{\begin{Piautolist}{\fdrsf@pifamily}{##1}}%
305     {\end{Piautolist}}
306 }{
307   \providecommand{\ding}[1]{}
308   \renewcommand{\ding}[1]{\usefont{U}{\fdrsf@pifamily}{m}{n}\char##1}}
309 }

```

7.6 Bullet figures

We provide two commands to access Fedra's bullet figures.

```

310 \newcommand*{\fdrsf@openbullet}[2]{%
311   \ifx#2\end
312     \char3#1%
313   \let\next@gobble

```

```

314 \else
315     \char2#1\kern-0.02em%
316     \let\next\fdrsfsf@@openbullet
317 \fi
318 \next#2%
319 }
320 \newcommand*\fdrsfsf@@openbullet}[2]{%
321     \ifx#2\end
322         \char0#1%
323         \let\next\@gobble
324     \else%
325         \char1#1\kern-0.02em%
326         \let\next\fdrsfsf@@openbullet
327     \fi
328     \next#2%
329 }
330 \DeclareRobustCommand*\openbullet}[1]{%
331     \begingroup
332     \usefont{U}{\fdrsfsf@family-Pi}{m}{n}%
333     \edef\@tempa{#1}\expandafter\fdrsfsf@@openbullet\@tempa\end
334     \endgroup
335 }
336 \newcommand*\fdrsfsf@@closedbullet}[2]{%
337     \ifx#2\end
338         \char7#1%
339         \let\next\@gobble
340     \else
341         \char6#1\kern-0.02em%
342         \let\next\fdrsfsf@@closedbullet
343     \fi
344     \next#2%
345 }
346 \newcommand*\fdrsfsf@closedbullet}[2]{%
347     \ifx#2\end
348         \char4#1%
349         \let\next\@gobble
350     \else
351         \char5#1\kern-0.02em%
352         \let\next\fdrsfsf@@closedbullet
353     \fi
354     \next#2%
355 }
356 \DeclareRobustCommand*\closedbullet}[1]{%
357     \begingroup
358     \usefont{U}{\fdrsfsf@family-Pi}{m}{n}%

```

```

359 \edef\@tempa{#1}\expandafter\fdrsf@closedbullet\@tempa\end
360 \endgroup
361 }

```

7.7 Superior and inferior figures

The following command converts numbers to inferior figures.

```

362 \newcommand*\fdrsf@@inferior}[1]{%
363   \ifx#1\end
364     \let\next\relax
365   \else
366     \char"1#1%
367     \let\next\fdrsf@@inferior
368   \fi
369   \next
370 }
371 \newcommand*\fdrsf@inferior}[1]{%
372   \begingroup
373   \edef\@tempa{#1}\expandafter\fdrsf@@inferior\@tempa\end
374   \endgroup
375 }

```

`\fdrsf@ensuretext` switches to text mode, if necessary.

```

376 \newcommand*\fdrsf@ensuretext}[1]{%
377   \ifmmode
378     \fdsy@text{#1}%
379   \else
380     #1%
381   \fi
382 }

```

We provide two commands for generating numerical fractions.

```

383 \newcommand*\fdrsf@smallfrac}[2]{%
384   \begingroup
385   \fontencoding{U}\fontfamily{\fdrsf@family-Extra}\fontshape{n}\selectfont
386   \leavevmode
387   \setbox\@tempboxa\vbox{%
388     \baselineskip\z@skip%
389     \lineskip.25ex%
390     \lineskiplimit-\maxdimen
391     \ialign{\hfil##\hfil\cr
392       \vbox to 1.25ex{\vss\hbox{#1}\vskip.25ex}\cr
393       \leavevmode\leaders\hrule height 0.91ex depth -0.87ex\hfill\cr
394       \vtop to 1ex{\vbox{}}\hbox{\fdrsf@inferior{#2}}\vss}\cr
395     \noalign{\vskip-1.2ex}}%
396   \box\@tempboxa

```

```

397 \endgroup
398 }
399 \DeclareRobustCommand*\smallfrac}[2]{%
400 \fdrsf@ensuretext{\kern0.08em\fdrsf@smallfrac{#1}{#2}\kern0.1em}%
401 }
402 \newcommand*\fdrsf@slantfrac}[2]{%
403 \begingroup
404 \fontencoding{U}\fontfamily{\fdrsf@family-Extra}\fontshape{n}\selectfont
405 #1\kern-0.05em/\kern0em\fdrsf@inferior{#2}%
406 \endgroup
407 }
408 \DeclareRobustCommand*\slantfrac}[2]{%
409 \fdrsf@ensuretext{\kern0.08em\fdrsf@slantfrac{#1}{#2}\kern0.1em}%
410 }

```

7.8 Logos

```

411 \DeclareRobustCommand{\LaTeX}{L\kern-.26em%
412 {\sbox\z@ T%
413 \vbox to\ht\z@{\hbox{\check@mathfonts
414 \fontsize\sf@size\z@
415 \math@fontsfalse\selectfont
416 A}%
417 \vss}%
418 }%
419 \kern-.05em%
420 \TeX
421 }

```

Make the changes take effect. This concludes the main style file.

```

422 \normalfont
423 \endpackage

```

8 Microtype configuration file

The microtype configuration. All four families use the same file (cf. section 9).

```

424 (*mtcfg)
425 \SetProtrusion
426 [ name = FedraSerifPro-n ]
427 { }
428 {
429 . = { ,700},
430 {,}= { ,500},
431 : = { ,500},
432 ; = { ,300},

```

```

433     ! = { ,100},
434     ? = { ,100},
435     @ = {50,50},
436     ~ = {200,250},
437     \% = {50,50},
438     * = {200,200},
439     + = {250,250},
440     ( = {100, }, ) = { ,200},
441     / = {100,200},
442     - = {600,600},
443     \textendash = {450,450}, \textemdash = {260,260},
444     \textquoteleft = {300,400}, \textquoteright = {300,400},
445     \textquotedblleft = {300,300}, \textquotedblright = {300,300}
446 }

447 \SetProtrusion
448 [ name = FedraSerifPro-OT1,
449   load = FedraSerifPro-n ]
450 { encoding = {OT1},
451   family = {FedraSerifProA-OsF,FedraSerifProA-LF,FedraSerifProA-TOsF,FedraSerifProA-TLF,%
452             FedraSerifProB-OsF,FedraSerifProB-LF,FedraSerifProB-TOsF,FedraSerifProB-TLF},
453   shape = {n,sc,ssc} }
454 { }

455 \SetProtrusion
456 [ name = FedraSerifPro-T1,
457   load = FedraSerifPro-n ]
458 { encoding = {T1,LY1},
459   family = {FedraSerifProA-OsF,FedraSerifProA-LF,FedraSerifProA-TOsF,FedraSerifProA-TLF,%
460             FedraSerifProB-OsF,FedraSerifProB-LF,FedraSerifProB-TOsF,FedraSerifProB-TLF},
461   shape = {n,sc,ssc} }
462 {
463   _ = {100,100},
464   \textbackslash = {100,200},
465   \quotesinglbase = {400,400}, \quotedblbase = {400,400},
466   \guilsinglleft = {400,300}, \guilsinglright = {300,400},
467   \guillemotleft = {200,200}, \guillemotright = {200,200},
468   \textexclamdown = {100, }, \textquestiondown = {100, },
469   \textbraceleft = {400,200}, \textbraceright = {200,400},
470   \textless = {200,100}, \textgreater = {100,200}
471 }

472 \SetProtrusion
473 [ name = FedraSerifPro-QX,
474   load = FedraSerifPro-n ]
475 { encoding = {QX},
476   family = {FedraSerifProA-OsF,FedraSerifProA-LF,FedraSerifProA-TOsF,FedraSerifProA-TLF,%

```

```

477         FedraSerifProB-OsF,FedraSerifProB-LF,FedraSerifProB-TOsF,FedraSerifProB-TLF},
478     shape    = {n,sc,ssc} }
479 {
480     _ = {100,100},
481     \textbackslash = {100,200},    \textellipsis = {100,200},
482     \textperiodcentered = {500,700}, \quotedblbase = {400,400},
483     \textquotedbl = {400,400},    \textquotesingle = {400,400},
484     \guillemotleft = {200,200},    \guillemotright = {200,200},
485     \textexclamdown = {100, },    \textquestiondown = {100, },
486     \textbraceleft = {400,200},    \textbraceright = {200,400},
487     \textless = {200,100},    \textgreater = {100,200}
488 }
489 \SetProtrusion
490 [ name    = FedraSerifPro-T5,
491   load    = FedraSerifPro-n ]
492 { encoding = {T5},
493   family   = {FedraSerifProA-OsF,FedraSerifProA-LF,FedraSerifProA-TOsF,FedraSerifProA-TLF,%
494             FedraSerifProB-OsF,FedraSerifProB-LF,FedraSerifProB-TOsF,FedraSerifProB-TLF},
495   shape    = {n,sc,ssc} }
496 {
497     _ = {100,100},
498     \textbackslash = {100,200},
499     \quotesinglbase = {400,400},    \quotedblbase = {400,400},
500     \guilsinglleft = {400,300},    \guilsinglright = {300,400},
501     \guillemotleft = {200,200},    \guillemotright = {200,200},
502     \textbraceleft = {400,200},    \textbraceright = {200,400},
503     \textless = {200,100},    \textgreater = {100,200}
504 }
505 \SetProtrusion
506 [ name    = FedraSerifPro-it ]
507 { }
508 {
509     . = { ,500},
510     {,}= { ,500},
511     : = { ,300},
512     ; = { ,300},
513     & = {50,50},
514     \% = {100, },
515     * = {200,200},
516     + = {150,200},
517     @ = {50,50},
518     ~ = {150,150},
519     ( = {200, },    ) = { ,200},
520     / = {100,200},
521     - = {630,630},

```

```

522     \textendash      = {200,200},    \textemdash      = {150,150},
523     \textquoteleft   = {400,200},    \textquoteright  = {400,200},
524     \textquotedblleft = {400,200},    \textquotedblright = {400,200}
525 }

526 \SetProtrusion
527 [ name      = FedraSerifPro-OT1-it,
528   load      = FedraSerifPro-it      ]
529 { encoding = OT1,
530   family   = {FedraSerifProA-OsF,FedraSerifProA-LF,FedraSerifProA-T0sF,FedraSerifProA-TLF,%,
531               FedraSerifProB-OsF,FedraSerifProB-LF,FedraSerifProB-T0sF,FedraSerifProB-TLF},
532   shape    = {it,scit,sscit,sw,scsw,sscs} }
533 { }

534 \SetProtrusion
535 [ name      = FedraSerifPro-T1-it,
536   load      = FedraSerifPro-it      ]
537 { encoding = {T1,LY1},
538   family   = {FedraSerifProA-OsF,FedraSerifProA-LF,FedraSerifProA-T0sF,FedraSerifProA-TLF,%,
539               FedraSerifProB-OsF,FedraSerifProB-LF,FedraSerifProB-T0sF,FedraSerifProB-TLF},
540   shape    = {it,sl,sw,scit,scsl,scsw} }
541 {
542   _ = { ,100},
543   \textbackslash      = {100,200},
544   \quotesinglbase     = {300,700},    \quotedblbase     = {400,500},
545   \guilsinglleft      = {400,400},    \guilsinglright   = {300,500},
546   \guillemotleft      = {300,300},    \guillemotright   = {300,300},
547   \textexclamdown     = {100, },      \textquestiondown = {200, },
548   \textbraceleft      = {200,100},    \textbraceright   = {200,200},
549 }

550 \SetProtrusion
551 [ name      = FedraSerifPro-QX-it,
552   load      = FedraSerifPro-it      ]
553 { encoding = {QX},
554   family   = {FedraSerifProA-OsF,FedraSerifProA-LF,FedraSerifProA-T0sF,FedraSerifProA-TLF,%,
555               FedraSerifProB-OsF,FedraSerifProB-LF,FedraSerifProB-T0sF,FedraSerifProB-TLF},
556   shape    = {it,sl,sw,scit,scsl,scsw} }
557 {
558   _ = { ,100},
559   \textbackslash      = {100,200},    \textellipsis     = {100,200},
560   \textperiodcentered = {500,700},    \quotedblbase     = {400,500},
561   \textquotedbl      = {400,400},    \textquotesingle  = {400,400},
562   \guillemotleft      = {300,300},    \guillemotright   = {300,300},
563   \textexclamdown     = {100, },      \textquestiondown = {200, },
564   \textbraceleft      = {200,100},    \textbraceright   = {200,200},
565 }

```



```

566 \SetProtrusion
567   [ name      = FedraSerifPro-T5-it,
568     load      = FedraSerifPro-it    ]
569   { encoding = {T5},
570     family   = {FedraSerifProA-0sF,FedraSerifProA-LF,FedraSerifProA-T0sF,FedraSerifProA-TLF,%
571               FedraSerifProB-0sF,FedraSerifProB-LF,FedraSerifProB-T0sF,FedraSerifProB-TLF},
572     shape    = {it,sl,sw,scit,scsl,scsw} }
573   {
574     _ = { ,100},
575     \textbackslash = {100,200},
576     \quotesinglbase = {300,700}, \quotedblbase = {400,500},
577     \guilsinglleft = {400,400}, \guilsinglright = {300,500},
578     \guillemotleft = {300,300}, \guillemotright = {300,300},
579     \textbraceleft = {200,100}, \textbraceright = {200,200},
580   }
581 \end{mtcfg}

```

9 Font definition support package

As all font definitions look the same, we introduce macros to ease the configuration. These macros are stored in the file `fedraserif-fd.sty`, which is included by every FD file. Since `fedraserif-fd.sty` will be included several times and we do not know in which context the code is executed, we have to define all non-private commands as globals and avoid all `\preambleonly` commands.

We add a guard so that this file is executed only once even if it is included multiple times.

```

582 \fontdef
583 \ifx\fdrsf@scale\undefined\else\endinput\fi

```

We distinguish between being loaded directly or via `\usepackage` in the preamble by checking `\@nodocument`.

```

584 \ifx\@nodocument\relax\else
585   \NeedsTeXFormat{LaTeX2e}
586   \RequirePackage{xkeyval}
587 \fi

```

Reset `\escapechar` (which is set to `-1` in FD files) to make `\newcommand` work. The additional group does not harm; we have to make the important commands global anyway.

```

588 \ifx\@nodocument\relax
589   \begingroup
590   \escapechar'\
591 \fi

```

The macro to make commands global is taken from the `otfontdef` package.

```
592 \newcommand*\fdrsf@makeglobal[1]{%
593   \global\expandafter\let\csname #1\expandafter\endcsname
594   \csname #1\endcsname
595 }
```

9.1 Options

These are the default values if it is impossible to process options.

```
596 \newcommand\fdrsf@mweight@normal{Book}
597 \newcommand\fdrsf@mweight@small{Book}
598 \newcommand\fdrsf@bweight@normal{Medium}
599 \newcommand\fdrsf@bweight@small{Medium}
600 \newcommand\fdrsf@scale{0.9}

601 \ifx\@nodocument\relax\else
602   \newcommand*\fdrsf@fd@choicekey[3]{%
603     \define@choicekey*{fedraserif-fd.sty}{#1}[\@tempa\@tempb]{#2}{#3}%
604   }
605   \fdrsf@fd@choicekey{normalweight}{book,demi,auto}{%
606     \ifcase\@tempb\relax
607       \renewcommand\fdrsf@mweight@normal{Book}
608       \renewcommand\fdrsf@mweight@small{Book}
609     \or
610       \renewcommand\fdrsf@mweight@normal{Demi}
611       \renewcommand\fdrsf@mweight@small{Demi}
612     \or
613       \renewcommand\fdrsf@mweight@normal{Book}
614       \renewcommand\fdrsf@mweight@small{Demi}
615     \fi
616   }
617   \fdrsf@fd@choicekey{boldweight}{medium,bold,auto}{%
618     \ifcase\@tempb\relax
619       \renewcommand\fdrsf@bweight@normal{Medium}
620       \renewcommand\fdrsf@bweight@small{Medium}
621     \or
622       \renewcommand\fdrsf@bweight@normal{Bold}
623       \renewcommand\fdrsf@bweight@small{Bold}
624     \or
625       \renewcommand\fdrsf@bweight@normal{Medium}
626       \renewcommand\fdrsf@bweight@small{Bold}
627     \fi
628   }
629   \define@key{fedraserif-fd.sty}{scale}[0.9]{\renewcommand*\fdrsf@scale{#1}}
630   \ProcessOptionsX\relax
```

```

631 \fi
632 \fdrsf@makeglobal{\fdrsf@mweight@normal}
633 \fdrsf@makeglobal{\fdrsf@mweight@small}
634 \fdrsf@makeglobal{\fdrsf@bweight@normal}
635 \fdrsf@makeglobal{\fdrsf@bweight@small}
636 \fdrsf@makeglobal{\fdrsf@scale}

```

9.2 Font configuration

We define commands to write to and read from the configuration database.

```

637 \newcommand*{\fdrsf@addconfig}[4][\%
638   \@for\@tempa:=#3\do{\%
639     \expandafter
640     \gdef\csname fdrsf@config@#2@#1@\@tempa\endcsname{#4}%
641   }%
642 }
643 \newcommand*{\fdrsf@useconfig}[3]{\%
644   \@ifundefined{fdrsf@config@#2@#1@#3}{\%
645     \@ifundefined{fdrsf@config@#2@#3}{\%
646       {\csname fdrsf@config@#2@#3\endcsname}%
647     }{\csname fdrsf@config@#2@#1@#3\endcsname}%
648 }
649 \fdrsf@makeglobal{\fdrsf@useconfig}

```

Now we can build up the configuration database.

```

650 \fdrsf@addconfig{weight/normal}{sl}{Book}
651 \fdrsf@addconfig{weight/small}{sl}{Book}
652 \fdrsf@addconfig{weight/normal}{m}{\fdrsf@mweight@normal}
653 \fdrsf@addconfig{weight/small}{m}{\fdrsf@mweight@small}
654 \fdrsf@addconfig{weight/normal}{md}{Demi}
655 \fdrsf@addconfig{weight/small}{md}{Demi}
656 \fdrsf@addconfig{weight/normal}{sb}{Medium}
657 \fdrsf@addconfig{weight/small}{sb}{Medium}
658 \fdrsf@addconfig{weight/normal}{b}{\fdrsf@bweight@normal}
659 \fdrsf@addconfig{weight/small}{b}{\fdrsf@bweight@small}
660 \fdrsf@addconfig{weight/small}{ub}{Bold}
661 \fdrsf@addconfig{weight/normal}{ub}{Bold}
662 \fdrsf@addconfig{subs/series}{bx}{b}
663 \fdrsf@addconfig{italic}{it,scit,sscit,sw,scsw,sscsw}{Italic}
664 \fdrsf@addconfig[OML]{italic}{n}{French}
665 \fdrsf@addconfig[OML]{italic}{it}{Mixed}
666 \fdrsf@addconfig{shape}{sc,scit}{-sc}
667 \fdrsf@addconfig{shape}{ssc,sscit}{-ssc}
668 \fdrsf@addconfig{shape}{sw}{-sw}
669 \fdrsf@addconfig{shape}{scsw}{-scsw}

```

```

670 \fdrsf@addconfig{shape}{sscsw}{-sscsw}
671 \fdrsf@addconfig{subs/shape}{sl}{it}
672 \fdrsf@addconfig{subs/shape}{scsl}{scit}
673 \fdrsf@addconfig{subs/shape}{sscs1}{ssc1}

```

This is the main macro to declare a single font shape.

```

674 \newcommand*\DeclareFedraSerifShape[5]{%
675   \edef\@tempa{\fdrsf@useconfig{#1}{subs/series}{#4}}%
676   \edef\@tempb{\fdrsf@useconfig{#1}{subs/shape}{#5}}%
677   \ifx\@tempa\empty\ifx\@tempb\empty
678     \DeclareFontShape{#1}{FedraSerifPro#2-#3}{#4}{#5}{%
679       <-7.1>s*[\fdrsf@scale]%
680       FSerPro#2-%
681       \fdrsf@useconfig{#1}{weight/small}{#4}%
682       \fdrsf@useconfig{#1}{italic}{#5}-#3%
683       \fdrsf@useconfig{#1}{shape}{#5}-#1%
684     <7.1->s*[\fdrsf@scale]%
685     FSerPro#2-%
686     \fdrsf@useconfig{#1}{weight/normal}{#4}%
687     \fdrsf@useconfig{#1}{italic}{#5}-#3%
688     \fdrsf@useconfig{#1}{shape}{#5}-#1%
689   }{}%
690   \else
691     \DeclareFontShape{#1}{FedraSerifPro#2-#3}{#4}{#5}{%
692       <->ssub* FedraSerifPro#2-#3/#4/\@tempb
693     }{}%
694   \fi\else
695     \DeclareFontShape{#1}{FedraSerifPro#2-#3}{#4}{#5}{%
696       <->ssub* FedraSerifPro#2-#3/\@tempa/#5%
697     }{}%
698   \fi
699 }
700 \fdrsf@makeglobal{\DeclareFedraSerifShape}

```

Finally, we provide commands to declare a complete family.

```

701 \newcommand*\DeclareFedraSerifFamily[5]{%
702   \DeclareFontFamily{#1}{FedraSerifPro#2-#3}{}%
703   \@for\fdrsf@series:=#4\do{%
704     \@for\fdrsf@shape:=#5\do{%
705       \DeclareFedraSerifShape{#1}{#2}{#3}{\fdrsf@series}{\fdrsf@shape}%
706     }%
707   }%
708 }
709 \fdrsf@makeglobal{\DeclareFedraSerifFamily}
710 \newcommand*\DeclareFedraSerifLargeFamily[3]{%
711   \DeclareFedraSerifFamily{#1}{#2}{#3}{sl,m,md,sb,b,bx,ub}%

```

```

712 {n,it,sc,ssc,scit,sscit,sw,scsw,sscs,sl,scsl,sscs1}%
713 }
714 \fdrsf@makeglobal{DeclareFedraSerifLargeFamily}
715 \newcommand*\DeclareFedraSerifSmallFamily[3]{%
716 \DeclareFedraSerifFamily{#1}{#2}{#3}{sl,m,md,sb,b,bx,ub}{n,it,sl}%
717 }
718 \fdrsf@makeglobal{DeclareFedraSerifSmallFamily}
719 \newcommand*\DeclareFedraSerifTinyFamily[3]{%
720 \DeclareFedraSerifFamily{#1}{#2}{#3}{sl,m,md,sb,b,bx,ub}{n}%
721 }
722 \fdrsf@makeglobal{DeclareFedraSerifTinyFamily}
723 \newcommand*\DeclareFedraSerifMathFamily[2]{%
724 \def\@tempa{#2}%
725 \def\@tempb{T0sF}%
726 \DeclareFontFamily{OML}{FedraSerifPro#1-#2}{\skewchar\font=127}%
727 \@for\fdrsf@series:=m,md,sb,b,bx,ub\do{%
728 \@for\fdrsf@shape:=n,it\do{%
729 \ifx\@tempa\@tempb
730 \DeclareFedraSerifShape{OML}{#1}{T0sF}{\fdrsf@series}{\fdrsf@shape}%
731 \else
732 \DeclareFontShape{OML}{FedraSerifPro#1-#2}{\fdrsf@series}{\fdrsf@shape}{%
733 <->ssub* FedraSerifPro#1-T0sF/\fdrsf@series/\fdrsf@shape
734 }{}}%
735 \fi
736 }%
737 }%
738 }
739 \fdrsf@makeglobal{DeclareFedraSerifMathFamily}

```

We define font family aliases so that we can place all configurations for the FedraSerifPro family variants into one microtype file: `mt-FedraSerifPro.cfg`. We use microtype's hook if microtype has not been loaded yet (which should be the case); otherwise we can execute the alias definitions directly.

```

740 \gdef\fdrsf@Microtype@Aliases{%
741 \DeclareMicrotypeAlias{FedraSerifProA-LF}{FedraSerifPro}%
742 \DeclareMicrotypeAlias{FedraSerifProA-0sF}{FedraSerifPro}%
743 \DeclareMicrotypeAlias{FedraSerifProA-TLF}{FedraSerifPro}%
744 \DeclareMicrotypeAlias{FedraSerifProA-T0sF}{FedraSerifPro}%
745 \DeclareMicrotypeAlias{FedraSerifProB-LF}{FedraSerifPro}%
746 \DeclareMicrotypeAlias{FedraSerifProB-0sF}{FedraSerifPro}%
747 \DeclareMicrotypeAlias{FedraSerifProB-TLF}{FedraSerifPro}%
748 \DeclareMicrotypeAlias{FedraSerifProB-T0sF}{FedraSerifPro}%
749 }
750 \ifundefined{Microtype@Hook}{%
751 \global\let\Microtype@Hook\fdrsf@Microtype@Aliases

```

```

752 }{%
753   \g@addto@macro\Microtype@Hook{\fdrsf@Microtype@Aliases}%
754 }%
755 \ifundefined{DeclareMicrotypeAlias}{\fdrsf@Microtype@Aliases}%
756 \ifx\@nodocument\relax
757   \endgroup
758 \fi
759 \fontdef)

```

10 Font definition files

Using the above macros, the various FD files become simple two-liners.

```

760 (*fd)
761 \input{fedraserif-fd.sty}
762 \a & ot1 & lf \DeclareFedraSerifLargeFamily{OT1}{A}{LF}
763 \a & ot1 & osf \DeclareFedraSerifLargeFamily{OT1}{A}{OsF}
764 \a & ot1 & tlf \DeclareFedraSerifLargeFamily{OT1}{A}{TLF}
765 \a & ot1 & tosf \DeclareFedraSerifLargeFamily{OT1}{A}{TOsF}
766 \a & t1 & lf \DeclareFedraSerifLargeFamily{T1}{A}{LF}
767 \a & t1 & osf \DeclareFedraSerifLargeFamily{T1}{A}{OsF}
768 \a & t1 & tlf \DeclareFedraSerifLargeFamily{T1}{A}{TLF}
769 \a & t1 & tosf \DeclareFedraSerifLargeFamily{T1}{A}{TOsF}
770 \a & ts1 & lf \DeclareFedraSerifLargeFamily{TS1}{A}{LF}
771 \a & ts1 & osf \DeclareFedraSerifLargeFamily{TS1}{A}{OsF}
772 \a & ts1 & tlf \DeclareFedraSerifLargeFamily{TS1}{A}{TLF}
773 \a & ts1 & tosf \DeclareFedraSerifLargeFamily{TS1}{A}{TOsF}
774 \a & ly1 & lf \DeclareFedraSerifLargeFamily{LY1}{A}{LF}
775 \a & ly1 & osf \DeclareFedraSerifLargeFamily{LY1}{A}{OsF}
776 \a & ly1 & tlf \DeclareFedraSerifLargeFamily{LY1}{A}{TLF}
777 \a & ly1 & tosf \DeclareFedraSerifLargeFamily{LY1}{A}{TOsF}
778 \a & qx & lf \DeclareFedraSerifLargeFamily{QX}{A}{LF}
779 \a & qx & osf \DeclareFedraSerifLargeFamily{QX}{A}{OsF}
780 \a & qx & tlf \DeclareFedraSerifLargeFamily{QX}{A}{TLF}
781 \a & qx & tosf \DeclareFedraSerifLargeFamily{QX}{A}{TOsF}
782 \a & t5 & lf \DeclareFedraSerifLargeFamily{T5}{A}{LF}
783 \a & t5 & osf \DeclareFedraSerifLargeFamily{T5}{A}{OsF}
784 \a & t5 & tlf \DeclareFedraSerifLargeFamily{T5}{A}{TLF}
785 \a & t5 & tosf \DeclareFedraSerifLargeFamily{T5}{A}{TOsF}
786 \a & oml & lf \DeclareFedraSerifMathFamily{A}{LF}
787 \a & oml & osf \DeclareFedraSerifMathFamily{A}{OsF}
788 \a & oml & tlf \DeclareFedraSerifMathFamily{A}{TLF}
789 \a & oml & tosf \DeclareFedraSerifMathFamily{A}{TOsF}
790 \a & u & extra \DeclareFedraSerifSmallFamily{U}{A}{Extra}
791 \a & u & orn \DeclareFedraSerifTinyFamily{U}{A}{Pi}

```

```

792 <a & u & bb>\DeclareFedraSerifFamily{U}{A}{BB}{m}{n}
793 <b & ot1 & lf>\DeclareFedraSerifLargeFamily{OT1}{B}{LF}
794 <b & ot1 & osf>\DeclareFedraSerifLargeFamily{OT1}{B}{OsF}
795 <b & ot1 & tlf>\DeclareFedraSerifLargeFamily{OT1}{B}{TLF}
796 <b & ot1 & tosf>\DeclareFedraSerifLargeFamily{OT1}{B}{TOsF}
797 <b & t1 & lf>\DeclareFedraSerifLargeFamily{T1}{B}{LF}
798 <b & t1 & osf>\DeclareFedraSerifLargeFamily{T1}{B}{OsF}
799 <b & t1 & tlf>\DeclareFedraSerifLargeFamily{T1}{B}{TLF}
800 <b & t1 & tosf>\DeclareFedraSerifLargeFamily{T1}{B}{TOsF}
801 <b & ts1 & lf>\DeclareFedraSerifLargeFamily{TS1}{B}{LF}
802 <b & ts1 & osf>\DeclareFedraSerifLargeFamily{TS1}{B}{OsF}
803 <b & ts1 & tlf>\DeclareFedraSerifLargeFamily{TS1}{B}{TLF}
804 <b & ts1 & tosf>\DeclareFedraSerifLargeFamily{TS1}{B}{TOsF}
805 <b & ly1 & lf>\DeclareFedraSerifLargeFamily{LY1}{B}{LF}
806 <b & ly1 & osf>\DeclareFedraSerifLargeFamily{LY1}{B}{OsF}
807 <b & ly1 & tlf>\DeclareFedraSerifLargeFamily{LY1}{B}{TLF}
808 <b & ly1 & tosf>\DeclareFedraSerifLargeFamily{LY1}{B}{TOsF}
809 <b & qx & lf>\DeclareFedraSerifLargeFamily{QX}{B}{LF}
810 <b & qx & osf>\DeclareFedraSerifLargeFamily{QX}{B}{OsF}
811 <b & qx & tlf>\DeclareFedraSerifLargeFamily{QX}{B}{TLF}
812 <b & qx & tosf>\DeclareFedraSerifLargeFamily{QX}{B}{TOsF}
813 <b & t5 & lf>\DeclareFedraSerifLargeFamily{T5}{B}{LF}
814 <b & t5 & osf>\DeclareFedraSerifLargeFamily{T5}{B}{OsF}
815 <b & t5 & tlf>\DeclareFedraSerifLargeFamily{T5}{B}{TLF}
816 <b & t5 & tosf>\DeclareFedraSerifLargeFamily{T5}{B}{TOsF}
817 <b & oml & lf>\DeclareFedraSerifMathFamily{B}{LF}
818 <b & oml & osf>\DeclareFedraSerifMathFamily{B}{OsF}
819 <b & oml & tlf>\DeclareFedraSerifMathFamily{B}{TLF}
820 <b & oml & tosf>\DeclareFedraSerifMathFamily{B}{TOsF}
821 <b & u & extra>\DeclareFedraSerifSmallFamily{U}{B}{Extra}
822 <b & u & orn>\DeclareFedraSerifTinyFamily{U}{B}{Pi}
823 <b & u & bb>\DeclareFedraSerifFamily{U}{B}{BB}{m}{n}
824 </fd>

```