

The mdwfonts* package

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1 Overview

This suite of L^AT_EX bits is intended to provide some configurability for the fonts used by documents. It lets users define their favourite collection of fonts, and any documents using this package will automatically honour those design decisions.

It goes a little beyond this brief, however, by supplying some missing PostScript fonts which may be useful. (Well, the author uses them a lot.) In particular:

- The ‘squashed’ Courier from David Carlisle’s `pslatex` package is included, and extended to cover the other known variants of Courier (e.g., bold and oblique).
- A maths symbol font for Palatino has been added. It works in a similar way to the `mathptm` package’s support for Times (i.e., it grabs glyphs from the normal Palatino font, and from the Computer Modern symbols).

*The mdwfonts package is currently at version 1.2, dated 11 January 1997.

2 Installing mdwfonts

The package comes with a large number of miscellaneous font files. They ought to be placed in appropriate directories where \TeX and/or other programs can find them. Exactly where this will be depends heavily on your installation: try looking for the other fonts and put these with them. The various extensions for the font files are:

.tfm is a \TeX Font Metric file, needed by \TeX .

.vf is a virtual font description file, needed by DVI-drivers.

.fd is a font description file, required by \LaTeX .

You'll also need to put `mdwfonts.sty` somewhere where \LaTeX will find it. What you do with the documentation file is up to you.

The files `mTTpcr.fd` and `mdwfonts.sty` may not have been included in your distribution. If you don't have them, run \LaTeX on `mdwfonts.ins` to build them. I'm explicitly not giving instructions for building all the other font files, because I'd much prefer it if they were distributed as they are, please – building them is a fiddly business, and I'd rather that only I had to do it.

Once you've done all that, you must tell *dvips* about your new fonts, so add the following lines to the `psfonts.map` file, unless they're already there:

```
pcrb8rn Courier-Bold ".85 ExtendFont TeXBase1Encoding ReEncodeFont" <8r.enc <pcrb8a.pfb
pcrbo8rn Courier-BoldOblique ".85 ExtendFont TeXBase1Encoding ReEncodeFont" <8r.enc <pcrbo8a.pfb
pcrr8rn Courier ".85 ExtendFont TeXBase1Encoding ReEncodeFont" <8r.enc <pcrr8a.pfb
pcrro8rn Courier-Oblique ".85 ExtendFont TeXBase1Encoding ReEncodeFont" <8r.enc <pcrro8a.pfb
```

The `pcrr8rn` line will already be in the file if you've installed the `pslatex` package, so don't bother putting it in again.

3 Using mdwfonts

3.1 Defining fonts to use

The font faces you can use, with their names as used by this package, currently are:

- Computer Modern Roman (`cmr`)
- Computer Modern Sans (`cmss`)
- Times Roman (`times`)
- Helvetica (`helvetica`)
- Palatino (`palatino`)
- Computer Modern Typewriter (`cmtt`)
- Courier (condensed version) (`courier`)

palatino Set body and maths families to Palatino.

cmr Set body, headings and maths families to Computer Modern Roman.

helvetica Set sans serif and headings families to Helvetica.

cmss Set sans serif family to Computer Modern Sans.

courier Set typewriter family to Courier.

cmtt Set typewriter family to Computer Modern Typewriter.

Astute readers will be able to deduce the author's personal preferences for assigning typefaces to families from the above rules. However, they should suffice for most simple configurations. Moreover, the direct assignment of faces to families is supported in case the above aren't expressive enough.

When `mdwfonts` starts up, it reads a file called `mdwfonts.cfg`, if it exists. This file should set up defaults for the various families according to the user's preferences. The decisions made by the configuration file may be overridden by the document, however, since package options are processed after running `mdwfonts.cfg`.

4 The package

```
1 <*sty>
```

4.1 Options handing

There are several font choices to be made. These can be made from the package options or the configuration file; the former takes precedence over the latter.

I'll use David Carlisle's rather good `keyval` package to handle this lot because it saves a lot of hassle in the long run.

```
2 \RequirePackage{keyval}
```

Now to define how all this actually works. Maintain a variable for each family that I understand, and a list of which fonts people have expressed an interest in.

```
3 \def\mdwf@bodyfont{\mdwf@cmr}
4 \def\mdwf@mathsfnt{\mdwf@bodyfont}
5 \def\mdwf@sansfont{\mdwf@cmss}
6 \def\mdwf@headfont{\mdwf@cmr}
7 \def\mdwf@ttfont{\mdwf@cmtt}
```

Now to define the keys and values which I'll accept.

```
8 \def\mdwf@set#1#2{\edef#1{\expandafter\noexpand\csname mdwf@#2\endcsname}}
9 \define@key{mdwf}{body}{\mdwf@set\mdwf@bodyfont{#1}}
10 \define@key{mdwf}{maths}{\mdwf@set\mdwf@mathsfnt{#1}}
11 \define@key{mdwf}{math}{\mdwf@set\mdwf@mathsfnt{#1}}
12 \define@key{mdwf}{sans}{\mdwf@set\mdwf@sansfont{#1}}
13 \define@key{mdwf}{head}{\mdwf@set\mdwf@headfont{#1}}
14 \define@key{mdwf}{tt}{\mdwf@set\mdwf@ttfont{#1}}
```

Now input the configuration file.

```
15 \def\mdwfont{\setkeys{mdwf}}
16 \input{mdwfonts.cfg}
```

Set up some package options which handle the common cases. Then add a catch-all option which just gets bundled to keyval.

```

17 \DeclareOption{times}{\mdwfont{body=times, maths=times}}
18 \DeclareOption{palatino}{\mdwfont{body=palatino, maths=palatino}}
19 \DeclareOption{cmr}{\mdwfont{body=cmr, maths=cmr, head=cmr}}
20 \DeclareOption{helvetica}{\mdwfont{sans=helvetica, head=helvetica}}
21 \DeclareOption{cmss}{\mdwfont{sans=cmss}}
22 \DeclareOption{courier}{\mdwfont{tt=courier}}
23 \DeclareOption{cmtt}{\mdwfont{tt=cmtt}}
24 \DeclareOption*\expandafter\mdwfont\expandafter{\CurrentOption}}
25 \ProcessOptions*

```

Now, if a client wants a really odd setup not provided by the above interface, it can define `\mdwfonts` to declare its decision.

```

26 \ifx\mdwfonts\@undefined\else
27   \def\@tempa#1\@{\mdwfont{#1}}
28   \expandafter\@tempa\mdwfonts\@
29 \fi

```

4.2 Setting up the actual fonts

`\mdwf@iffont` I need to check whether a font's been used. This macro will help.

First, I'll define some numeric values for various fonts.

```

30 \count@z@
31 \def\@tempa#1{%
32   \expandafter\chardef\csname mdwf@#1\endcsname\count@%
33   \advance\count@\@ne%
34 }
35 \@tempa{cmr}\@tempa{cmss}\@tempa{cmtt}
36 \@tempa{times}\@tempa{palatino}\@tempa{helvetica}\@tempa{courier}

```

And now to check whether a font is being used. This is rather horrible.

```

37 \def\mdwf@iffont#1{\if1%
38   \ifnum\mdwf@bodyfont=#1\else%
39   \ifnum\mdwf@headfont=#1\else%
40   \ifnum\mdwf@sansfont=#1\else%
41   \ifnum\mdwf@ttfont=#1\else0%
42   \fi\fi\fi\fi%
43 }

```

4.2.1 Text fonts

Courier The courier family is redefined in its entirety here. I use the condensed courier provided by David Carlisle's `pslatex` package, although I've extended it to cover all the shapes and not just medium roman.

```

44 \mdwf@iffont\mdwf@courier
45 \DeclareFontFamily{OT1}{pcr}{\hyphenchar\font=-1}
46 \DeclareFontShape{OT1}{pcr}{b}{n}{<-> pcrb7tn}{}
47 \DeclareFontShape{OT1}{pcr}{b}{sc}{<-> pcrbc7tn}{}
48 \DeclareFontShape{OT1}{pcr}{b}{sl}{<-> pcrbo7tn}{}
49 \DeclareFontShape{OT1}{pcr}{m}{n}{<-> pcrr7tn}{}
50 \DeclareFontShape{OT1}{pcr}{m}{sc}{<-> pcrrc7tn}{}

```

```

51 \DeclareFontShape{OT1}{pcr}{m}{sl}{<-> pcrro7tn}{}
52 \DeclareFontShape{OT1}{pcr}{bx}{n}{<->ssub * pcr/b/n}{}
53 \DeclareFontShape{OT1}{pcr}{bx}{sc}{<->ssub * pcr/b/sc}{}
54 \DeclareFontShape{OT1}{pcr}{bx}{sl}{<->ssub * pcr/b/sl}{}
55 \DeclareFontShape{OT1}{pcr}{b}{it}{<->ssub * pcr/b/sl}{}
56 \DeclareFontShape{OT1}{pcr}{bx}{it}{<->ssub * pcr/b/it}{}
57 \DeclareFontShape{OT1}{pcr}{m}{it}{<->ssub * pcr/m/sl}{}
58 \DeclareFontFamily{T1}{pcr}{\hyphenchar\font=-1}
59 \DeclareFontShape{T1}{pcr}{b}{n}{<-> pcrb8tn}{}
60 \DeclareFontShape{T1}{pcr}{b}{sc}{<-> pcrbc8tn}{}
61 \DeclareFontShape{T1}{pcr}{b}{sl}{<-> pcrbo8tn}{}
62 \DeclareFontShape{T1}{pcr}{m}{n}{<-> pcrro8tn}{}
63 \DeclareFontShape{T1}{pcr}{m}{sc}{<-> pcrrc8tn}{}
64 \DeclareFontShape{T1}{pcr}{m}{sl}{<-> pcrro8tn}{}
65 \DeclareFontShape{T1}{pcr}{bx}{n}{<->ssub * pcr/b/n}{}
66 \DeclareFontShape{T1}{pcr}{bx}{sc}{<->ssub * pcr/b/sc}{}
67 \DeclareFontShape{T1}{pcr}{bx}{sl}{<->ssub * pcr/b/sl}{}
68 \DeclareFontShape{T1}{pcr}{b}{it}{<->ssub * pcr/b/sl}{}
69 \DeclareFontShape{T1}{pcr}{bx}{it}{<->ssub * pcr/b/it}{}
70 \DeclareFontShape{T1}{pcr}{m}{it}{<->ssub * pcr/m/sl}{}
71 \fi

```

Helvetica Again the whole of helvetica is defined here, this time so that the font can be scaled a little.

```

72 \mdwf@iffont\mdwf@helvetica
73 \DeclareFontFamily{OT1}{phv}{}
74 \DeclareFontShape{OT1}{phv}{b}{n}{<-> s * [.9] phvb7t}{}
75 \DeclareFontShape{OT1}{phv}{b}{sc}{<-> s * [.9] phvbc7t}{}
76 \DeclareFontShape{OT1}{phv}{b}{sl}{<-> s * [.9] phvbo7t}{}
77 \DeclareFontShape{OT1}{phv}{bc}{n}{<-> s * [.9] phvbrn7t}{}
78 \DeclareFontShape{OT1}{phv}{bc}{sc}{<-> s * [.9] phvbcn7t}{}
79 \DeclareFontShape{OT1}{phv}{bc}{sl}{<-> s * [.9] phvbon7t}{}
80 \DeclareFontShape{OT1}{phv}{m}{n}{<-> s * [.9] phvr7t}{}
81 \DeclareFontShape{OT1}{phv}{m}{sc}{<-> s * [.9] phvrc7t}{}
82 \DeclareFontShape{OT1}{phv}{m}{sl}{<-> s * [.9] phvro7t}{}
83 \DeclareFontShape{OT1}{phv}{mc}{n}{<-> s * [.9] phvrrn7t}{}
84 \DeclareFontShape{OT1}{phv}{mc}{sc}{<-> s * [.9] phvrcn7t}{}
85 \DeclareFontShape{OT1}{phv}{mc}{sl}{<-> s * [.9] phvron7t}{}
86 \DeclareFontShape{OT1}{phv}{bx}{n}{<->ssub * phv/b/n}{}
87 \DeclareFontShape{OT1}{phv}{bx}{sc}{<->ssub * phv/b/sc}{}
88 \DeclareFontShape{OT1}{phv}{bx}{sl}{<->ssub * phv/b/sl}{}
89 \DeclareFontShape{OT1}{phv}{b}{it}{<->ssub * phv/b/sl}{}
90 \DeclareFontShape{OT1}{phv}{bx}{it}{<->ssub * phv/b/it}{}
91 \DeclareFontShape{OT1}{phv}{bc}{it}{<->ssub * phv/bc/sl}{}
92 \DeclareFontShape{OT1}{phv}{m}{it}{<->ssub * phv/m/sl}{}
93 \DeclareFontShape{OT1}{phv}{mc}{it}{<->ssub * phv/mc/sl}{}
94 \DeclareFontFamily{T1}{phv}{}
95 \DeclareFontShape{T1}{phv}{b}{n}{<-> s * [.9] phvb8t}{}
96 \DeclareFontShape{T1}{phv}{b}{sc}{<-> s * [.9] phvbc8t}{}
97 \DeclareFontShape{T1}{phv}{b}{sl}{<-> s * [.9] phvbo8t}{}
98 \DeclareFontShape{T1}{phv}{bc}{n}{<-> s * [.9] phvbrn8t}{}
99 \DeclareFontShape{T1}{phv}{bc}{sc}{<-> s * [.9] phvbcn8t}{}
100 \DeclareFontShape{T1}{phv}{bc}{sl}{<-> s * [.9] phvbon8t}{}

```

```

101 \DeclareFontShape{T1}{phv}{m}{n}{<-> s * [.9] phvr8t}{}
102 \DeclareFontShape{T1}{phv}{m}{sc}{<-> s * [.9] phvrc8t}{}
103 \DeclareFontShape{T1}{phv}{m}{sl}{<-> s * [.9] phvro8t}{}
104 \DeclareFontShape{T1}{phv}{mc}{n}{<-> s * [.9] phvrrn8t}{}
105 \DeclareFontShape{T1}{phv}{mc}{sc}{<-> s * [.9] phvrcn8t}{}
106 \DeclareFontShape{T1}{phv}{mc}{sl}{<-> s * [.9] phvron8t}{}
107 \DeclareFontShape{T1}{phv}{bx}{n}{<->ssub * phv/b/n}{}
108 \DeclareFontShape{T1}{phv}{bx}{sc}{<->ssub * phv/b/sc}{}
109 \DeclareFontShape{T1}{phv}{bx}{sl}{<->ssub * phv/b/sl}{}
110 \DeclareFontShape{T1}{phv}{b}{it}{<->ssub * phv/b/sl}{}
111 \DeclareFontShape{T1}{phv}{bx}{it}{<->ssub * phv/b/it}{}
112 \DeclareFontShape{T1}{phv}{bc}{it}{<->ssub * phv/bc/sl}{}
113 \DeclareFontShape{T1}{phv}{m}{it}{<->ssub * phv/m/sl}{}
114 \DeclareFontShape{T1}{phv}{mc}{it}{<->ssub * phv/mc/sl}{}
115 \fi

```

Palatino Might as well define palatino too, for completeness' sake.

```

116 \mdwf@iffont\mdwf@palatino
117 \DeclareFontFamily{OT1}{ppl}{}
118 \DeclareFontShape{OT1}{ppl}{b}{n}{<-> pplb7t}{}
119 \DeclareFontShape{OT1}{ppl}{b}{sc}{<-> pplbc7t}{}
120 \DeclareFontShape{OT1}{ppl}{b}{sl}{<-> pplbo7t}{}
121 \DeclareFontShape{OT1}{ppl}{b}{it}{<-> pplbi7t}{}
122 \DeclareFontShape{OT1}{ppl}{m}{n}{<-> pplr7t}{}
123 \DeclareFontShape{OT1}{ppl}{m}{sc}{<-> pplrc7t}{}
124 \DeclareFontShape{OT1}{ppl}{m}{sl}{<-> pplro7t}{}
125 \DeclareFontShape{OT1}{ppl}{m}{it}{<-> pplri7t}{}
126 \DeclareFontShape{OT1}{ppl}{bx}{n}{<->ssub * ppl/b/n}{}
127 \DeclareFontShape{OT1}{ppl}{bx}{sc}{<->ssub * ppl/b/sc}{}
128 \DeclareFontShape{OT1}{ppl}{bx}{sl}{<->ssub * ppl/b/sl}{}
129 \DeclareFontShape{OT1}{ppl}{bx}{it}{<->ssub * ppl/b/it}{}
130 \DeclareFontShape{OT1}{ppl}{l}{n}{<->ssub * ppl/m/n}{}
131 \DeclareFontShape{OT1}{ppl}{l}{sc}{<->ssub * ppl/m/sc}{}
132 \DeclareFontShape{OT1}{ppl}{l}{sl}{<->ssub * ppl/m/sl}{}
133 \DeclareFontShape{OT1}{ppl}{l}{it}{<->ssub * ppl/m/it}{}
134 \DeclareFontFamily{T1}{ppl}{}
135 \DeclareFontShape{T1}{ppl}{b}{n}{<-> pplb8t}{}
136 \DeclareFontShape{T1}{ppl}{b}{sc}{<-> pplbc8t}{}
137 \DeclareFontShape{T1}{ppl}{b}{sl}{<-> pplbo8t}{}
138 \DeclareFontShape{T1}{ppl}{b}{it}{<-> pplbi8t}{}
139 \DeclareFontShape{T1}{ppl}{m}{n}{<-> pplr8t}{}
140 \DeclareFontShape{T1}{ppl}{m}{sc}{<-> pplrc8t}{}
141 \DeclareFontShape{T1}{ppl}{m}{sl}{<-> pplro8t}{}
142 \DeclareFontShape{T1}{ppl}{m}{it}{<-> pplri8t}{}
143 \DeclareFontShape{T1}{ppl}{bx}{n}{<->ssub * ppl/b/n}{}
144 \DeclareFontShape{T1}{ppl}{bx}{sc}{<->ssub * ppl/b/sc}{}
145 \DeclareFontShape{T1}{ppl}{bx}{sl}{<->ssub * ppl/b/sl}{}
146 \DeclareFontShape{T1}{ppl}{bx}{it}{<->ssub * ppl/b/it}{}
147 \DeclareFontShape{T1}{ppl}{l}{n}{<->ssub * ppl/m/n}{}
148 \DeclareFontShape{T1}{ppl}{l}{sc}{<->ssub * ppl/m/sc}{}
149 \DeclareFontShape{T1}{ppl}{l}{sl}{<->ssub * ppl/m/sl}{}
150 \DeclareFontShape{T1}{ppl}{l}{it}{<->ssub * ppl/m/it}{}
151 \fi

```

Times Finally, times, for those who like it...

```
152 \mdwf@iffont\mdwf@times
153 \DeclareFontFamily{OT1}{ptm}{}
154 \DeclareFontShape{OT1}{ptm}{b}{n}{<-> ptmb7t}{}
155 \DeclareFontShape{OT1}{ptm}{b}{sc}{<-> ptmbc7t}{}
156 \DeclareFontShape{OT1}{ptm}{b}{sl}{<-> ptmbo7t}{}
157 \DeclareFontShape{OT1}{ptm}{b}{it}{<-> ptmbi7t}{}
158 \DeclareFontShape{OT1}{ptm}{m}{n}{<-> ptmr7t}{}
159 \DeclareFontShape{OT1}{ptm}{m}{sc}{<-> ptmrc7t}{}
160 \DeclareFontShape{OT1}{ptm}{m}{sl}{<-> ptmro7t}{}
161 \DeclareFontShape{OT1}{ptm}{m}{it}{<-> ptmri7t}{}
162 \DeclareFontShape{OT1}{ptm}{bx}{n}{<->ssub * ptm/b/n}{}
163 \DeclareFontShape{OT1}{ptm}{bx}{sc}{<->ssub * ptm/b/sc}{}
164 \DeclareFontShape{OT1}{ptm}{bx}{sl}{<->ssub * ptm/b/sl}{}
165 \DeclareFontShape{OT1}{ptm}{bx}{it}{<->ssub * ptm/b/it}{}
166 \DeclareFontShape{OT1}{ptm}{l}{n}{<->ssub * ptm/m/n}{}
167 \DeclareFontShape{OT1}{ptm}{l}{sc}{<->ssub * ptm/m/sc}{}
168 \DeclareFontShape{OT1}{ptm}{l}{sl}{<->ssub * ptm/m/sl}{}
169 \DeclareFontShape{OT1}{ptm}{l}{it}{<->ssub * ptm/m/it}{}
170 \DeclareFontFamily{T1}{ptm}{}
171 \DeclareFontShape{T1}{ptm}{b}{n}{<-> ptmb8t}{}
172 \DeclareFontShape{T1}{ptm}{b}{sc}{<-> ptmbc8t}{}
173 \DeclareFontShape{T1}{ptm}{b}{sl}{<-> ptmbo8t}{}
174 \DeclareFontShape{T1}{ptm}{b}{it}{<-> ptmbi8t}{}
175 \DeclareFontShape{T1}{ptm}{m}{n}{<-> ptmr8t}{}
176 \DeclareFontShape{T1}{ptm}{m}{sc}{<-> ptmrc8t}{}
177 \DeclareFontShape{T1}{ptm}{m}{sl}{<-> ptmro8t}{}
178 \DeclareFontShape{T1}{ptm}{m}{it}{<-> ptmri8t}{}
179 \DeclareFontShape{T1}{ptm}{bx}{n}{<->ssub * ptm/b/n}{}
180 \DeclareFontShape{T1}{ptm}{bx}{sc}{<->ssub * ptm/b/sc}{}
181 \DeclareFontShape{T1}{ptm}{bx}{sl}{<->ssub * ptm/b/sl}{}
182 \DeclareFontShape{T1}{ptm}{bx}{it}{<->ssub * ptm/b/it}{}
183 \DeclareFontShape{T1}{ptm}{l}{n}{<->ssub * ptm/m/n}{}
184 \DeclareFontShape{T1}{ptm}{l}{sc}{<->ssub * ptm/m/sc}{}
185 \DeclareFontShape{T1}{ptm}{l}{sl}{<->ssub * ptm/m/sl}{}
186 \DeclareFontShape{T1}{ptm}{l}{it}{<->ssub * ppl/m/it}{}
187 \fi
```

4.2.2 Maths fonts

Palatino Easy stuff.

```
188 \ifnum\mdwf@mathsfont=\mdwf@palatino
189 \DeclareSymbolFont{operators} {OT1}{pplcm}{m}{n}
190 \DeclareSymbolFont{letters} {OML}{pplcm}{m}{it}
191 \DeclareSymbolFont{bold} {OT1}{ppl}{bx}{n}
192 \DeclareSymbolFont{italic} {OT1}{ppl}{m}{it}
193 \fi
```

Times Also easy.

```
194 \ifnum\mdwf@mathsfont=\mdwf@times
195 \DeclareSymbolFont{operators} {OT1}{ptmcm}{m}{n}
196 \DeclareSymbolFont{letters} {OML}{ptmcm}{m}{it}
197 \DeclareSymbolFont{bold} {OT1}{ptm}{bx}{n}
```

```

198 \DeclareSymbolFont{italic}      {OT1}{ptm}{m}{it}
199 \fi

```

General PostScript things Set up the symbols and large symbols fonts. This lot is all from mathptm.

```

200 \if1\ifnum\mdwf@mathsfont=\mdwf@times1\else
201   \ifnum\mdwf@mathsfont=\mdwf@palatino1\else0\fi\fi
202 \DeclareSymbolFont{symbols}      {OMS}{pzcmm}{m}{n}
203 \DeclareSymbolFont{largesymbols}{OMX}{psycm}{m}{n}

```

Adjust the spacing around operators and things to fit PostScript fonts better.

```

204 \thinmuskip=2mu
205 \medmuskip=2.5mu plus 1mu minus 1mu
206 \thickmuskip=4mu plus 1.5mu minus 1mu

```

There isn't a bold symbol font.

```

207 \def\boldmath{%
208   \@warning{there is no bold Symbol font}%
209   \global\let\boldmath=\relax
210 }

```

Provide an \omicron character. No idea why...

```

211 \DeclareMathSymbol{\omicron}{0}{operators}{'\o}

```

Make scripts a bit bigger.

```

212 \DeclareMathSizes{5}{5}{5}{5}
213 \DeclareMathSizes{6}{6}{5}{5}
214 \DeclareMathSizes{7}{7}{5}{5}
215 \DeclareMathSizes{8}{8}{6}{5}
216 \DeclareMathSizes{9}{9}{7}{5}
217 \DeclareMathSizes{10}{10}{7.4}{6}
218 \DeclareMathSizes{10.95}{10.95}{8}{6}
219 \DeclareMathSizes{12}{12}{9}{7}
220 \DeclareMathSizes{14.4}{14.4}{10.95}{8}
221 \DeclareMathSizes{17.28}{17.28}{12}{10}
222 \DeclareMathSizes{20.74}{20.74}{14.4}{12}
223 \DeclareMathSizes{24.88}{24.88}{17.28}{14.4}

```

Redefine the standard font for the symbols encoding.

```

224 \DeclareFontSubstitution{OMS}{pzcmm}{m}{n}
225 \fi

```

4.3 Setting the font families

First, define the family names for everything.

```

226 \def\mdwf@cmr{cmr}
227 \def\mdwf@cmss{cmss}
228 \def\mdwf@cmtt{cmtt}
229 \def\mdwf@times{ptm}
230 \def\mdwf@palatino{ppl}
231 \def\mdwf@helvetica{phv}
232 \def\mdwf@courier{pcr}

```

Now assign families to the various variables.

```
233 \edef\rmdefault{\mdwf@bodyfont}
234 \edef\sfddefault{\mdwf@sansfont}
235 \edef\ttdefault{\mdwf@ttfont}
236 \edef\headdefault{\mdwf@headfont}

Set various maths families.

237 \def\mdwf@mathsfam#1#2#3{%
238   \edef\@tempa{\noexpand\DeclareMathAlphabet{\noexpand#1}{#2}{#3}}%
239   \@tempa%
240 }
241 \mdwf@mathsfam{\mathit}{OT1}{\rmdefault}{m}{it}
242 \mdwf@mathsfam{\mathbf}{OT1}{\rmdefault}{bx}{n}
243 \mdwf@mathsfam{\mathsf}{OT1}{\sfddefault}{m}{n}
244 \mdwf@mathsfam{\mathtt}{OT1}{\ttdefault}{m}{n}

Finally, set \headfam nicely.

245 \def\headfam{\fontfamily\headdefault\selectfont}
```

4.4 Clobber standard packages

Now, if I recognise this document class, patch it until it accepts `\headfam` correctly. This stuff isn't terribly pleasant, but I don't care about that.

First see if I'm in familiar territory.

```
246 \begingroup
247 \catcode'\.11
248 \if1\ifx\ver@article.cls\@undefined
249   \ifx\ver@report.cls\@undefined
250     \ifx\ver@book.cls\@undefined
251       \ifx\ver@amsart.cls\@undefined
252         \ifx\ver@amsproc.cls\@undefined
253           \ifx\ver@amsbook.cls\@undefined0%
254           \else1\fi
255         \else1\fi
256       \else1\fi
257     \else1\fi
258   \else1\fi
259 \else1\fi
```

Looks like it. Now to patch the `\@startsection`-based commands. I'll redefine `\@startsection` to do the attaching for me, and then just run all the commands which want patching.

```
260 \def\@startsection#1#2#3#4#5#6#7{%
261   \gdef#7{\@startsection{#1}{#2}{#3}{#4}{#5}{#6\headfam}}%
262 }
263 \section\section
264 \subsection\subsection
265 \subsubsection\subsubsection
266 \paragraph\paragraph
267 \subparagraph\subparagraph
268 \if1\ifx\ver@amsart.cls\@undefined\ifx\ver@amsproc.cls\@undefined0%
269   \else1\fi\else1\fi
270 \part\part
271 \fi
```

Now for the difficult bits. Firstly, deal with part headings for normal L^AT_EX classes.

```

272 \long\def\mdwf@grab#1{\expandafter\mdwf@grab@i#1\@@delim}
273 \long\def\mdwf@grab@i#1\@@delim#2{#2{#1}}
274 \def\mdwf@patch@opt#1{\mdwf@grab{#1[##1]{##2}}\mdwf@patch@opt@i#1}
275 \long\def\mdwf@patch@opt@i#1#2{\gdef#2[##1]##2{%
276   \let\mdwf@bfseries\bfseries\def\bfseries{\headfam\mdwf@bfseries}%
277   #1%
278   \let\bfseries\mdwf@bfseries%
279 }}%
280 \def\mdwf@patch#1{\mdwf@grab{#1[##1]}\mdwf@patch@i#1}
281 \long\def\mdwf@patch@i#1#2{\gdef#2##1{%
282   \let\mdwf@bfseries\bfseries\def\bfseries{\headfam\mdwf@bfseries}%
283   #1%
284   \let\bfseries\mdwf@bfseries%
285 }}%
286 \if0\ifx\ver@amsart.cls\@undefined\ifx\ver@amsproc.cls\@undefined0%
287   \else1\fi\else1\fi
288   \mdwf@patch@opt\@part
289   \mdwf@patch\@spart
290 \fi
291 \ifx\@makechapterhead\@undefined\else
292   \mdwf@patch\@makechapterhead
293   \mdwf@patch\@makeschapterhead
294 \fi
295 \fi
296 \endgroup

Wasn't that fun?
That's it for the package.

297 </sty>

```

5 Font installation script

If you're lucky you'll never need to use this.

```

298 (*fontinst)
299 \input fontinst.sty

Firstly, some code for building squashed courier fonts.

300 \def\squashcourier#1{%
301   \transformfont{pcr#18rn}{%
302     \xscalefont{850}{%
303       \reencodefont{8r}{\fromafm{pcr#18a}}}}
304 \squashcourier{b}
305 \squashcourier{bo}
306 \squashcourier{r}
307 \squashcourier{ro}

Now start installing fonts.

308 \installfonts

```

Start with the courier ones.

```

309 \installfont{pcrb7tn}{pcrb8rn,psyr,latin}{OT1tt}{OT1}{pcr}{b}{n}{}
310 \installfont{pcrb8tn}{pcrb8rn,psyr,latin}{T1}{T1}{pcr}{b}{n}{}
311 \installfont{pcrbc7tn}{pcrb8rn,psyr,latin}{OT1ctt}{OT1}{pcr}{b}{sc}{}
312 \installfont{pcrbc8tn}{pcrb8rn,psyr,latin}{T1c}{T1}{pcr}{b}{sc}{}
313 \installfont{pcrbo7tn}{pcrbo8rn,psyr,latin}{OT1tt}{OT1}{pcr}{b}{sl}{}
314 \installfont{pcrbo8tn}{pcrbo8rn,psyr,latin}{T1}{T1}{pcr}{b}{sl}{}
315 \installfont{pcrr7tn}{pcrr8rn,psyr,latin}{OT1tt}{OT1}{pcr}{m}{n}{}
316 \installfont{pcrr8tn}{pcrr8rn,psyr,latin}{T1}{T1}{pcr}{m}{n}{}
317 \installfont{pcrrc7tn}{pcrr8rn,psyr,latin}{OT1ctt}{OT1}{pcr}{m}{sc}{}
318 \installfont{pcrrc8tn}{pcrr8rn,psyr,latin}{T1c}{T1}{pcr}{m}{sc}{}
319 \installfont{pcrro7tn}{pcrro8rn,psyr,latin}{OT1tt}{OT1}{pcr}{m}{sl}{}
320 \installfont{pcrro8tn}{pcrro8rn,psyr,latin}{T1}{T1}{pcr}{m}{sl}{}

```

Now build palatino-based maths fonts. This lot seems to work. It's based on mathptm, and hacked a bit.

```

321 \installfamily{OT1}{pplcm}{}
322 \installfamily{OML}{pplcm}{\skewchar\font=127}
323 \installfamily{OMS}{pzccm}{}
324 \installfamily{OMX}{psycm}{}
325 \installfont{zpplcmr}
326   {pplr8r,psyr,latin,zrhax,kernoff,cmr10}
327   {OT1}{OT1}{pplcm}{m}{n}{}
328 \installfont{zpplcmrm}
329   {kernoff,cmmi10,kernon,unsetalf,unsethumb,pplr8r,psyr,mathit,zrmhax}
330   {OML}{OML}{pplcm}{m}{it}{}
331 \installfont{zpzccmry}
332   {cmsy10,unsethumb,psyr,pplr8r,unsetalf,pzcmi8r scaled 1124,mathsy}
333   {OMS}{OMS}{pzccm}{m}{n}{}
334 \installfont{zpsycmrv}
335   {cmex10,psyr,zrvhax,cmex9 scaled 900}
336   {OMX}{OMX}{psycm}{m}{n}{}

```

Done.

```

337 \endinstallfonts
338 \end
339 </fontinst>

```

6 Description file for courier

Here's a short .fd file for the squashed courier font which makes it work in my 'mTT' encoding.

```

340 <#mttpr>
341 \DeclareFontFamily{mTT}{pcr}{\hyphenchar\font=-1}
342 \DeclareFontShape{mTT}{pcr}{b}{n}{<-> pcrb7tn}{}
343 \DeclareFontShape{mTT}{pcr}{b}{sc}{<-> pcrbc7tn}{}
344 \DeclareFontShape{mTT}{pcr}{b}{sl}{<-> pcrbo7tn}{}
345 \DeclareFontShape{mTT}{pcr}{m}{n}{<-> pcrr7tn}{}
346 \DeclareFontShape{mTT}{pcr}{m}{sc}{<-> pcrrc7tn}{}
347 \DeclareFontShape{mTT}{pcr}{m}{sl}{<-> pcrrro7tn}{}
348 \DeclareFontShape{mTT}{pcr}{bx}{n}{<->ssub * pcr/b/n}{}%
349 \DeclareFontShape{mTT}{pcr}{bx}{sc}{<->ssub * pcr/b/sc}{}%

```

```
350 \DeclareFontShape{mTT}{pcr}{bx}{sl}{<->ssub * pcr/b/sl}{}%
351 \DeclareFontShape{mTT}{pcr}{b}{it}{<->ssub * pcr/b/sl}{}%
352 \DeclareFontShape{mTT}{pcr}{bx}{it}{<->ssub * pcr/b/it}{}%
353 \DeclareFontShape{mTT}{pcr}{m}{it}{<->ssub * pcr/m/sl}{}%
354 </mttocr>
```

Done.

Mark Wooding, 11 January 1997

Appendix

A The GNU General Public Licence

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Version 2, June 1991

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