Modern Beamer Presentations
with the
MTHEME package

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? from ?

1 Introduction

Beamer is an awesome way to make presentations with LaTeX. But the stock themes do not necessarily look particularly nice and the custom themes often scream "Beamer" at first sight. The goal of MTHEME is to provide a modern Beamer theme with minimal visual noise. It provides section slides with a neat progress bar and It is intended to be used with Fira Sans, a gorgeous typeface commissioned by Mozilla and designed by Carrois. Hence to get the best results you should have installed the Fira typeface and use XeTeX to typeset your slides. Nevertheless this is no hard dependency. The theme also works fine with pdfTeX and the Computer Modern typeface.

The codebase is maintained on GitHub. So if you have issues, find mistakes in the manual or want to contribute – to make the theme even better – get in contact there.

2 Getting Started

To get started with the theme is very simple. The following code shows a minimal example of a Beamer presentation using the MTHEME.

```
\documentclass[10pt]{beamer}
\usetheme{m}                          % load mtheme
```

```
\title{A modern beamer theme}         % define title
\date{\today}                         % define date
\author{Matthias Vogelgesang}         % define author
\institute{Institute}                 % define institute
\begin{document}
\maketitle                            % create titlepage
\section{First Section}               % create section
\begin{frame}{First Frame}            % first frame
  Lorem ipsum dolor sit amet, ...
\end{frame}
\begin{frame}{Second Frame}           % second frame
  Lorem ipsum dolor sit amet, ...
\end{frame}
\end{document}
```

3 Known Issues

4 Changelog

5 License

The theme itself is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License. This means that if you change the theme and re-distribute it, you must retain the copyright notice header and license it under the same CC-BY-SA license. This does not affect the presentation that you create with the theme.

6 Contributors

7 Implementation

7.1 Main Theme

Options

```
1 \newif\if@useTitleProgressBar
2 \@useTitleProgressBarfalse
3 \DeclareOptionBeamer{usetitleprogressbar}{
4   \@useTitleProgressBartrue
5 }
```

usetotalslideindicator

```
6 \newif\if@useTotalSlideIndicator
7 \@useTotalSlideIndicatorfalse
8 \DeclareOptionBeamer{usetotalslideindicator}{
9   \@useTotalSlideIndicatortrue
10 }
```

noslidenumbers

```
11 \newif\if@noSlideNumbers
12 \@noSlideNumbersfalse
13 \DeclareOptionBeamer{noslidenumbers}{
14   \@noSlideNumberstrue
15 }
```

nosectionslide

```
16 \newif\if@noSectionSlide
17 \@noSectionSlidefalse
18 \DeclareOptionBeamer{nosectionslide}{
19   \@noSectionSlidetrue
20 }
```

protectframetitle

```
21 \newif\if@protectFrameTitle
22 \@protectFrameTitlefalse
23 \DeclareOptionBeamer{protectframetitle}{
24   \@protectFrameTitletrue
25 }
```

nooffset

```
26 \newlength{\@mtheme@voffset}
27 \setlength{\@mtheme@voffset}{2em}
28 \DeclareOptionBeamer{nooffset}{
29   \setlength{\@mtheme@voffset}{0em}
30 }
```

blockbg

```
31 \DeclareOptionBeamer{blockbg}{
32   \PassOptionsToPackage{blockbg}{beamercolorthememetropolis}%
33 }
```

Unknown option error handling

```
34 \DeclareOptionBeamer*{
35   \PackageWarning{beamerthemem}{Unknown option `\CurrentOption'}%
36 }
37 \ProcessOptionsBeamer
```

mthemetitleformat

\mthemetitleformat

```
38 \def\mthemetitleformat#1{\scshape #1}
```

```
39 \mode<presentation>
```

Packages

```
40 \RequirePackage{etoolbox}
41 \RequirePackage{tikz}
42 \RequirePackage{pgfplots}
43 \RequirePackage{ifxetex,ifluatex}
44 \newif\ifxetexorluatex
45 \ifxetex
46   \xetexorluatextrue
47 \else
48   \ifluatex
49     \xetexorluatextrue
50   \else
51     \xetexorluatexfalse
52   \fi
53 \fi
54 \usetikzlibrary{backgrounds}
55 \usetikzlibrary{calc}
56 \usecolortheme{metropolis}
57 \ifxetexorluatex
58   \usefonttheme{metropolis}
59 \else
60   \PackageWarning{beamerthemem}{You need to compile with XeLa-
  TeX or LuaLaTeX for the Fira fonts.}
61 \fi
```

Make Titlepage

\maketitle

62 `\def\maketitle{\ifbeamer@inframe\titlepage\else\frame[plain]{\titlepage}\fi}`

Define Titlepage

\titlepage

63 `\def\titlepage{\usebeamertemplate{title page}}`

Set beamer title page template

```
64 \setbeamertemplate{title page}
65 {
66   \begin{minipage}[b][\paperheight]{\textwidth}
67     \vspace*{\@mtheme@voffset}
68
69     \ifx\inserttitlegraphic\@empty\else
70     {% \inserttitlegraphic is nonempty
71       \vbox to 0pt
72         {% display title graphic without changing the posi-
   tion of other elements
73         \vspace*{2em}
74         \usebeamercolor[fg]{titlegraphic}%
75         \inserttitlegraphic%
76       }%
77       \nointerlineskip%
78     }
79     \fi
80
81     \vfill%
82
83     \ifx\inserttitle\@empty\else
84     {{% \inserttitle is nonempty
85       \raggedright%
86       \linespread{1.0}%
87       \usebeamerfont{title}%
88       \usebeamercolor[fg]{title}%
89       \mthemetitleformat{\inserttitle}%
90       \vspace*{0.5em}
91     }}
```

```latex
92      \fi
93
94      \ifx\insertsubtitle\@empty\else
95      {{% \insertsubtitle is nonempty
96        \usebeamerfont{subtitle}%
97        \usebeamercolor[fg]{subtitle}%
98        \insertsubtitle%
99        \vspace*{0.5em}%
100     }}
101     \fi
102
103     \begin{tikzpicture}
104       \usebeamercolor{title separator}
105       \draw[fg] (0, 0) -- (\textwidth, 0);
106     \end{tikzpicture}%
107     \vspace*{1em}%
108
109     \ifx\beamer@shortauthor\@empty\else
110       {{% \insertauthor is always nonempty by beamer's defini-
  tion, so we must
111       % test another macro which is initialized by \author{...}
112     % For details, see http://tex.stackexchange.com/questions/241306/
113       \usebeamerfont{author}%
114       \usebeamercolor[fg]{author}%
115       \insertauthor%
116       \par%
117       \vspace*{0.25em}
118     }}
119     \fi
120
121     \ifx\insertdate\@empty\else
122     {{% \insertdate is nonempty
123       \usebeamerfont{date}%
124       \usebeamercolor[fg]{date}%
125       \insertdate%
126       \par%
127     }}
128     \fi
129
130     \ifx\insertinstitute\@empty\else
```

```
131    {{% \insertinstitute is nonempty
132      \vspace*{3mm}
133      \usebeamerfont{institute}%
134      \usebeamercolor[fg]{institute}%
135      \insertinstitute%
136      \par%
137    }}
138    \fi
139
140    \vfill
141    \vspace*{\@mtheme@voffset}
142  \end{minipage}
143 }
```

Progressbar

```
144 \RequirePackage{calc}
```

```
145 \def\inserttotalframenumber{100}  % prevent \progressbar@percent from get-
    ting too big on first compile

146 \newlength{\progressbar@percent}
```

\progressbar

```
147 \newcommand{\progressbar}[1]{%
148   \setlength{\progressbar@percent}{%
149     #1 * \ratio{\insertframenumber pt}{\inserttotalframenumber pt}%
150   }%
151   \begin{tikzpicture}[tight background]
152     \usebeamercolor{progress bar}
153     \draw[bg, fill=bg] (0,0) rectangle (#1, 0.4pt);
154   \draw[fg, fill=fg] (0,0) rectangle (\progressbar@percent, 0.4pt);
155   \end{tikzpicture}%
156 }
```

Commands

\insertsectionHEAD

```
157 \newcommand{\insertsectionHEAD}{%
158   \expandafter\insertsectionHEADaux\insertsectionhead}
```

```
159 \newcommand{\insertsectionHEADaux}[3]{\mthemetitleformat{#3}}%
```

Create a plain frame with dark background

```
160 \newcommand{\plain}[2][]{%
161   \begingroup
162   \setbeamercolor{background canvas}{use=palette primary,parent=palette pri-
    mary}
163     \begin{frame}{#1}
164       \centering
165       \vfill
166       \vspace{1em}
167       \usebeamercolor[fg]{palette primary}
168       \usebeamerfont{section title}
169       \mthemetitleformat{#2}
170       \vfill
171     \end{frame}
172   \endgroup
173 }
```

Itemize tweaks

```
174 \setlength{\leftmargini}{1em}
175 \setlength{\leftmarginii}{1em}
176 \setlength{\leftmarginiii}{1em}
```

```
177 \newcommand{\itemBullet}{·}
```

```
178 \setbeamertemplate{itemize item}{\itemBullet}
179 \setbeamertemplate{itemize subitem}{\itemBullet}
180 \setbeamertemplate{itemize subsubitem}{\itemBullet}
181 \setlength{\parskip}{0.5em}
```

Sections

```
182 \setbeamertemplate{section page}
183 {
184   \vspace{2em}
185   \centering
186   \begin{minipage}{22em}
```

```
187     \usebeamercolor[fg]{section title}
188     \usebeamerfont{section title}
189     \insertsectionHEAD\\[-1ex]
190     \progressbar{\textwidth}
191   \end{minipage}
192   \par
193 }
```

Insert frame with section title at every section start

```
194 \if@noSectionSlide\else%
195   \AtBeginSection[]
196   {
197     \ifbeamer@inframe
198       \sectionpage
199     \else
200       \frame[plain]{\sectionpage}
201     \fi
202   }
203 \fi
```

Captions

```
204 \setbeamertemplate{caption label separator}{: }
205 \setbeamertemplate{caption}[numbered]
```

Footline/footnote

```
206 \usenavigationsymbolstemplate{}
207 \setbeamertemplate{footline}
208 {%
209 \begin{beamercolorbox}[wd=\textwidth,ht=3ex,dp=3ex,leftskip=0.3cm,rightskip=0.3cm]{
210   \hfill\usebeamerfont{page number in head/foot}%
211 \if@noSlideNumbers%
212   %Purposefully left blank to display no slide number.%
213   \else%
214     \if@useTotalSlideIndicator%
215     \insertframenumber/\inserttotalframenumber%
216     \else%
217     \insertframenumber%
218     \fi%
219   \fi%
220 \end{beamercolorbox}%
221 }
```

```
222 \setbeamertemplate{footnote}
223 {%
224   \parindent 0em\noindent%
225   \raggedright
226   \usebeamercolor{footnote}\hbox to 0.8em{\hfil\insertfootnotemark}\insertfootnotetex
227 }
```

Frametitle

```
228 \setbeamertemplate{frametitle}{%
229 \nointerlineskip
230 \begin{beamercolorbox}[wd=\paperwidth,leftskip=0.3cm,rightskip=0.3cm,ht=2.5ex,dp=1.
231 \usebeamerfont{frametitle}%
232 \if@protectFrameTitle%
233     \mthemetitleformat{\protect\insertframetitle}%
234 \else%
235     \mthemetitleformat{\insertframetitle}%
236 \fi%
237 \end{beamercolorbox}%
238 \if@useTitleProgressBar
239   \nointerlineskip
240   \begin{beamercolorbox}[wd=\paperwidth,ht=0.4pt,dp=0pt]{frametitle}
241     \progressbar{\paperwidth}
242   \end{beamercolorbox}
243 \fi
244 \vspace{\@mtheme@voffset}
245 }
```

pgfplots
Colors
TolColors from http://www.r-bloggers.com/the-paul-tol-21-color-salute/

```
246 \definecolor{TolColor1}{HTML}{332288}   % dark purple
247 \definecolor{TolColor2}{HTML}{6699CC}   % dark blue
248 \definecolor{TolColor3}{HTML}{88CCEE}   % light blue
249 \definecolor{TolColor4}{HTML}{44AA99}   % light green
250 \definecolor{TolColor5}{HTML}{117733}   % dark green
251 \definecolor{TolColor6}{HTML}{999933}   % dark brown
252 \definecolor{TolColor7}{HTML}{DDCC77}   % light brown
253 \definecolor{TolColor8}{HTML}{661100}   % dark red
254 \definecolor{TolColor9}{HTML}{CC6677}   % light red
255 \definecolor{TolColor10}{HTML}{AA4466}  % light pink
```

```
256 \definecolor{TolColor11}{HTML}{882255}  % dark pink
257 \definecolor{TolColor12}{HTML}{AA4499}  % light purple
```

Color cycles

```
258 \pgfplotscreateplotcyclelist{mbarplot cycle}{%
259   {draw=TolColor2, fill=TolColor2!70},
260   {draw=TolColor7, fill=TolColor7!70},
261   {draw=TolColor4, fill=TolColor4!70},
262   {draw=TolColor11, fill=TolColor11!70},
263   {draw=TolColor1, fill=TolColor1!70},
264   {draw=TolColor8, fill=TolColor8!70},
265   {draw=TolColor6, fill=TolColor6!70},
266   {draw=TolColor9, fill=TolColor9!70},
267   {draw=TolColor10, fill=TolColor10!70},
268   {draw=TolColor12, fill=TolColor12!70},
269   {draw=TolColor3, fill=TolColor3!70},
270   {draw=TolColor5, fill=TolColor5!70},
271 }
272 \pgfplotscreateplotcyclelist{mlineplot cycle}{%
273   {TolColor2, mark=*, mark size=1.5pt},
274   {TolColor7, mark=square*, mark size=1.3pt},
275   {TolColor4, mark=triangle*, mark size=1.5pt},
276   {TolColor6, mark=diamond*, mark size=1.5pt},
277 }
```

Styles

```
278 \pgfplotsset{
279   compat=1.9,
280   mbaseplot/.style={
281     legend style={
282       draw=none,
283       fill=none,
284       cells={anchor=west},
285     },
286     x tick label style={
287       font=\footnotesize
288     },
289     y tick label style={
290       font=\footnotesize
291     },
292     legend style={
```

```
293      font=\footnotesize
294    },
295    major grid style={
296      dotted,
297    },
298    axis x line*=bottom,
299  },
300  mlineplot/.style={
301    mbaseplot,
302    xmajorgrids=true,
303    ymajorgrids=true,
304    major grid style={dotted},
305    axis x line=bottom,
306    axis y line=left,
307    legend style={
308      cells={anchor=west},
309      draw=none
310    },
311    cycle list name=mlineplot cycle,
312  },
313  mbarplot base/.style={
314    mbaseplot,
315    bar width=6pt,
316    axis y line*=none,
317  },
318  mbarplot/.style={
319    mbarplot base,
320    ybar,
321    xmajorgrids=false,
322    ymajorgrids=true,
323    area legend,
324    legend image code/.code={%
325      \draw[#1] (0cm,-0.1cm) rectangle (0.15cm,0.1cm);
326    },
327    cycle list name=mbarplot cycle,
328  },
329  horizontal mbarplot/.style={
330    mbarplot base,
331    xmajorgrids=true,
332    ymajorgrids=false,
```

```
333    xbar stacked,
334    area legend,
335    legend image code/.code={%
336      \draw[#1] (0cm,-0.1cm) rectangle (0.15cm,0.1cm);
337    },
338    cycle list name=mbarplot cycle,
339  },
340  disable thousands separator/.style={
341    /pgf/number format/.cd,
342      1000 sep={}
343  },
344 }
345 \mode<all>
```

misc

```
346 \let\otp\titlepage
```

\titlepage

```
347 \renewcommand{\titlepage}{\otp\addtocounter{framenumber}{-1}}
```

\mreducelistspacing

```
348 \newcommand{\mreducelistspacing}{\vspace{-\topsep}}

349 \linespread{1.15}
```

7.2   Font Theme

Font Definitions

```
350 \RequirePackage[no-math]{fontspec}
351 \defaultfontfeatures{Mapping=tex-text}
352 \setsansfont[BoldItalicFont={Fira Sans Italic},%
353             ItalicFont={Fira Sans Light Italic},%
354             BoldFont={Fira Sans}]{Fira Sans Light}
355 \setmonofont{Fira Mono}
356 \newfontfamily\ExtraLight{Fira Sans ExtraLight}
357 \newfontfamily\Light{Fira Sans Light}
358 \newfontfamily\Book{Fira Sans}
359 \newfontfamily\Medium{Fira Sans Medium}
360 \AtBeginEnvironment{tabular}{%
361    \setsansfont[BoldFont={Fira Sans},%
```

```
362                   Numbers={Monospaced}]]{Fira Sans Light}%
363     }
```

Font Assignment

```
364 \setbeamerfont{title}{family=\Book, size=\Large}
365 \setbeamerfont{author}{family=\ExtraLight, size=\small}
366 \setbeamerfont{date}{family=\ExtraLight, size=\small}
367 \setbeamerfont{section title}{family=\Book, size=\Large}
368 \setbeamerfont{block title}{family=\Book, size=\normalsize}
369 \setbeamerfont{block title alerted}{family=\Book,size=\normalsize}
370 \setbeamerfont{subtitle}{family=\Light, size=\fontsize{12}{14}}
371 \setbeamerfont{frametitle}{family=\Book, size=\large}
372 \setbeamerfont{caption}{size=\small}
373 \setbeamerfont{caption name}{family=\Book}
374 \setbeamerfont{description item}{family=\Book}
375 \setbeamerfont{page number in head/foot}{size=\scriptsize}
```

Bibliograpy

```
376 \setbeamerfont{bibliography entry author}{family=\Light, size=\normalsize}
377 \setbeamerfont{bibliography entry title}{family=\Book, size=\normalsize}
378 \setbeamerfont{bibliography entry location}{family=\Light, size=\normalsize}
379 \setbeamerfont{bibliography entry note}{family=\Light, size=\small}
380 \linespread{1.15}
```

7.3 Color Theme

Options

```
381 \newif\if@beamer@metropolis@blockbg
382 \@beamer@metropolis@blockbgfalse
383 \DeclareOptionBeamer{blockbg}{
384     \@beamer@metropolis@blockbgtrue
385 }
```

Unknown option error handling

```
386 \DeclareOptionBeamer*{%
387  \PackageWarning{beamercolorthememetropolis}{Unknown option `\CurrentOption'}%
388 }
389 \ProcessOptionsBeamer
```

Colors

```
390 \definecolor{mDarkBrown}{HTML}{604c38}
391 \definecolor{mDarkTeal}{HTML}{23373b}
392 \definecolor{mLightBrown}{HTML}{EB811B}
393 \definecolor{mLightGreen}{HTML}{14B03D}
```

Base Colors

```
394 \setbeamercolor{normal text}{%
395   fg=mDarkTeal,
396   bg=black!2
397 }
398 \setbeamercolor{alerted text}{%
399   fg=mLightBrown
400 }
401 \setbeamercolor{example text}{%
402   fg=mLightGreen
403 }
```

Derived Colors

```
404 \setbeamercolor{titlelike}{use=normal text, parent=normal text}
405 \setbeamercolor{structure}{%
406   fg=normal text.fg
407 }
```

Frame titles and plain slides

```
408 \setbeamercolor{frametitle}{use=palette primary, parent=palette pri-
   mary}
```

The "primary" palette should be used for the most important navigational elements, and possibly of other elements. The metropolis color theme uses it for frame titles and slides.

```
409 \setbeamercolor{palette primary}{%
410   use=normal text,
411   fg=normal text.bg,
412   bg=normal text.fg
413 }
```

Progress bar and title separator

```
414 \setbeamercolor{title separator}{use=progress bar, parent=progress bar}
415 \setbeamercolor{progress bar}{%
416   use=alerted text,
417   fg=alerted text.fg,
```

```
418   bg=normal text.bg!50!fg
419 }
```

Blocks

```
420 \if@beamer@metropolis@blockbg
421   \setbeamercolor{block title}{%
422     use=normal text,
423     fg=normal text.fg,
424     bg=normal text.bg!80!fg
425   }
426 \else
427   \setbeamercolor{block title}{use=normal text, parent=normal text}
428 \fi
429 \setbeamercolor{block title alerted}{%
430     use={block title, alerted text},
431     bg=block title.bg,
432     fg=alerted text.fg
433 }
434 \setbeamercolor{block title example}{%
435     use={block title, example text},
436     bg=block title.bg,
437     fg=example text.fg
438 }
439 \setbeamercolor{block body alerted}{use=block body, parent=block body}
440 \setbeamercolor{block body example}{use=block body, parent=block body}
441 \setbeamercolor{block body}{
442   use={block title, normal text},
443   bg=block title.bg!50!normal text.bg
444 }
```

Footnotes

```
445 \setbeamercolor{footnote}{fg=normal text.fg!90}
446 \setbeamercolor{footnote mark}{fg=.}
447 \mode<all>
```