



MASARYKOVA UNIVERZITA
PŘÍRODOVĚDECKÁ FAKULTA

«EXTRA@DEPARTMENTCs»



«extra@titleCs»

Bakalářská práce

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Vedoucí práce: Doc. RNDr. Petr Sojka, Ph.D.

Brno 2019

Bibliografický záznam

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«extra@departmentCs»

Název práce: «extra@titleCs»

Studijní program: «extra@programmeCs»

Obor: «extra@fieldCs»

Vedoucí práce: Doc. RNDr. Petr Sojka, Ph.D.

Akademický rok: 2019/2020

Počet stran: ix + 8

Klíčová slova: «extra@keywordsCs»

Bibliographic record

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Title of Thesis: A fibeamer user guide for the Faculty of Science

Degree Programme: Applied Informatics

Field of study: Typesetting

Supervisor: Doc. RNDr. Petr Sojka, Ph.D.

Academic Year: 2019/2020

Number of Pages: ix + 8

Keywords: thesis, typesetting, L^AT_EX

Abstrakt

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Abstract

Fibeamer is a theme for the beamer L^AT_EX document class and is intended to be used for the preparation of thesis defense presentations across the faculties of the Masaryk University. This document describes the installation of the fibeamer theme, its configuration, and its use.

Prohlášení

Prohlašuji, že jsem svoji bakalářskou práci vypracoval samostatně s využitím informačních zdrojů, které jsou v práci citovány.

Brno, 16. prosince 2019

Podpis autora

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1 Introduction

To use the fibeamer beamer theme, you can use an online \LaTeX editor, such as Overleaf¹, which allows you to skip the installation described in Section 1.1 completely.

Another way to avoid installation is to use the faculty \TeX Live installation by connecting to the Linux server at $\blacktriangledown\text{yoda.math.muni.cz}$ or $\blacktriangle\text{vader.math.muni.cz}$ over SSH (through port 2222) or over the remote desktop protocol² (through port 13556), or to use any public-access computer at the Faculty of Science that runs Linux. If you choose this approach, you can also skip this entire section, although a certain degree of proficiency in working with a Unix operating system is required compared to the first method.

1.1 Installation

1.1.1 Installing a \TeX distribution

If you decided not to use a public \TeX distribution, you will need to install one locally before proceeding further. A \TeX distribution contains tools and packages that are going to help you with preparing and typesetting your \LaTeX documents.

The two major \TeX distributions that you can install are Mik \TeX ³, which can be used with the Microsoft Windows operating system, and \TeX Live⁴, which can be installed on both Unix and Windows operating systems. The advantages of Mik \TeX include refined graphical user interface and the ability to install new packages on the fly.

Along with Mik \TeX , you will also need to install a Perl interpreter, such as Strawberry Perl⁵. \TeX Live installs a Perl interpreter by default.

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1. Overleaf fibeamer templates are located at <http://www.overleaf.com/gallery/tagged/muni>.
 2. For more information about connecting through the remote desktop protocol, see <http://www.math.muni.cz/aktuality/347-vzdaleny-pristup-yoda-vader.html>.
 3. Mik \TeX can be acquired from <http://miktex.org/2.9/setup>.
 4. \TeX Live can be acquired from <http://www.tug.org/texlive>.
 5. Strawberry Perl can be downloaded from <http://strawberryperl.com/>.

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1.1.2 Installing packages

In order to function properly, fibeamer needs the following packages packages to be installed in your \TeX distribution: ifthen, ifxetex, ifluatex, lm, carlito, arev, iwona, dejavu, setspace, fontenc, fonts spec, beamer, fibeamer.

If you performed a full installation of \TeX Live, you should already have all the required packages installed. If you are using a partial installation of \TeX Live, you can use the `tlmgr` command-line tool by executing `tlmgr install <pkgname>`, where `<pkgname>` is the name of the package you wish to install. In some cases, \TeX Live may assign a different name to a package. To find out the \TeX Live name of a package, open the <http://www.ctan.org/pkg/<pkgname>> webpage in a web browser. It should contain the following text:

Contained in \TeX Live as `<texlive name>`

where `<texlive name>` corresponds to the \TeX Live name of the package. Use this name instead of `<pkgname>` with `tlmgr`. Alternatively, you can download the packages manually from <http://www.ctan.org/pkg/<pkgname>> and extract them into the `texmf` directory located in your user home directory. Mind that the packages themselves may depend on other packages; if you are using a partial installation of \TeX Live, you will have to resolve these dependencies manually by inspecting the documentation of each package.

If you use Mik \TeX and you enabled the *over the air installation of packages* during the installation, Mik \TeX will automatically download all the required packages, when you first typeset a fibeamer document. If you didn't enable this feature, you will need to enter the Mik \TeX package manager by running

`Start > Mik \TeX > Mik \TeX Package Manager (Admin)`

and download the packages manually through the user interface. In some cases, Mik \TeX may assign a different name to a package. To find out the Mik \TeX name of a package, open the <http://www.ctan.org/pkg/<pkgname>> webpage in a web browser, where `<pkgname>` is the name of the package you wish to install. It should contain the following text:

Contained in Mik \TeX as `<miktex name>`

where `<miktexname>` corresponds to the Mik^TE_X name of the package. If you still can't find the package, try synchronizing the package database by selecting

Repository > Synchronize

from the menu bar of the Mik^TE_X package manager. Mind that the packages themselves may depend on other packages; if you disabled the over the air installation of packages, you will have to resolve these dependencies manually by inspecting the documentation of each package.

If you wish to use a newer version of fibeamer than the one that is available in your T_EX distribution, you should download a file named `fibeamer.tds.zip` containing the version of the package you wish to use and place it in a root directory that is recognized by your T_EX distribution. In T_EX Live⁶, one of such directories is the `texmf/` folder in your user home directory. In Mik^TE_X⁷, the list of recognized root directories can be gleaned by running

Start > Mik^TE_X > Mik^TE_X Options (Admin) > Roots

1.2 Picking a T_EX engine

There are several programs, called T_EX engines, that you can use to typeset fibeamer L^AT_EX source files into displayable PDF documents. The ones we will discuss are pdfT_EX and LuaT_EX.

PdfT_EX is the more conservative choice and most T_EX editors use pdfT_EX as the default T_EX engine. The main advantage LuaT_EX over pdfT_EX for a fibeamer user is the ability to use standard OpenType and TrueType fonts installed on your system, whereas pdfT_EX is confined to the fonts installed in your T_EX distribution.

If the ability to use arbitrary fonts within your documents interests you, Chapter 3 of the fontspec package manual⁸ should provide

6. For more information about the T_EX Live root directories, see <http://www.tug.org/texlive/doc/texlive-en/texlive-en.html#x1-110002.3>, Chapter 2.3.

7. For more information about the T_EX Live root directories, see <http://docs.miktex.org/manual/localadditions.html>.

8. The fontspec package manual is available at <http://mirrors.ctan.org/macros/latex/contrib/fontspec/fontspec.pdf>.

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you with the relevant information. If you are only going to use the fonts present in the \TeX distribution or if you do not intend to change the preset fibeamer fonts at all, you can safely use $\text{pdf}\text{\TeX}$, which is currently also considerably faster than $\text{Lua}\text{\TeX}$.

1.3 Creating and typesetting a fibeamer document

Before using the fibeamer theme, it is useful to be familiar with the \LaTeX typesetting system. A good way to get started is to read one of the introductory texts in English [1–4] or in Czech [5, 6]. Taking one of the *FI:PB029*, *PřF:M5751*, or *FF:PLIN028* courses taught at the Masaryk University is also helpful.

To become familiar with fibeamer, you are encouraged to inspect the example fibeamer documents named `mu-sci-pdflatex.pdf` and `mu-sci-lualatex.pdf` as well as their \LaTeX source files that are named `mu-sci-pdflatex.tex` and `mu-sci-lualatex.tex`. These example documents are distributed along with the package inside the `example/` directory⁹. By modifying and by typesetting these \LaTeX source files using either the $\text{pdf}\text{\TeX}$ or the $\text{Lua}\text{\TeX}$ engine, you can quickly gain a working knowledge of \LaTeX and use these source files as the basis for your thesis.

If you are using an online editor, such as Overleaf¹⁰, \LaTeX source files will be typeset automatically, as you edit them. The \TeX engine can be selected inside the `project settings`.

If you are using a graphical \TeX editor, such as $\text{\TeX}works$ ¹¹, you can typeset a \LaTeX source file by opening the source file from within the editor and running either the $\text{pdf}\text{\TeX}$ or $\text{Lua}\text{\TeX}$ (depending on your choice of \TeX engine) command from the task bar. The command needs to be executed at least twice.

If you are using the command line, you can typeset \LaTeX source files by running either `pdflatex name.tex` or `lualatex name.tex`

9. The example fibeamer documents are also available online at <http://mirror.ctan.org/macros/latex/contrib/beamer-contrib/fibeamer/example/mu>. To typeset the example documents, you need to download the `resources/` directory as well, as it contains vector images used in the examples.

10. Overleaf fibeamer templates are located at <http://www.overleaf.com/gallery/tagged/muni>.

11. $\text{\TeX}works$ can be downloaded from <http://www.tug.org/texworks/>.

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(depending on your choice of \TeX engine), where *name.tex* corresponds to the name of a \LaTeX source file. In the case of the two aforementioned example files, the corresponding commands would be:

```
pdflatex mu-sci-pdflatex.tex  
lualatex mu-sci-lualatex.tex
```

The command needs to be executed from within the directory, where the \LaTeX source file is located. In Windows, the command line can be opened in a directory by holding down the **Shift** key and by clicking the right mouse button while hovering the cursor over a directory. Select the **Open Command Window Here** option in the context menu that opens shortly afterwards. The command also needs to be executed at least twice.

Beside Overleaf and \TeX works, any text editor can be used to modify \LaTeX source files.

2 Configuration

A fibeamer L^AT_EX source file should begin as follows:

```
\documentclass{beamer}  
\usetheme[option1, option2, ..., optionN]{fibeamer}
```

The following list summarizes the options that are recognized by the fibeamer theme and their meaning. Options that are enabled by default are *set in italics*.

faculty=⟨name⟩ This option changes the color theme based on the selected faculty. To choose the color theme of the Faculty of Science, use **sci** as the ⟨name⟩.

f*onts* This option sets up the combination of the font families of Carlito, Arev, Iwona, Dsfont, and DejaVu for the typesetting of text and mathematics.

n*ofonts* This option prevents fibeamer from setting up the fonts. The user must set the fonts manually in the preamble of the document.

If you are typesetting your thesis on a public-access computer at the Faculty of Science that runs Linux or on either the \blacktriangledown yoda.math.muni.cz or \blacktriangle vader.math.muni.cz Linux server, you can also use the commercial Math Time mathematical font family, which goes well with the T_EX Gyre Termes text font family. To use Math Time and T_EX Gyre Termes within your thesis, the preamble of your document should look as follows:

```
\documentclass{beamer}  
\usetheme[nofonts, ...]{fibeamer}  
\usepackage[utf8]{inputenc}  
\usepackage{cmap}  
\usepackage[T1]{fontenc}  
\usepackage{tgtermes}  
\usepackage{mathtime}  
%% Here goes the rest of the document.
```

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microtype This option sets up microtypographic extensions¹, which results in visually more pleasing paragraphs of text.

nomicrotype This option prevents fibeamer from setting up microtypographic extensions.

The complete list of the package options can be found in Section 2 of the technical documentation of the fibeamer class [7].

1. For more information about the \TeX engine microtypographic extensions, see <http://mirrors.ctan.org/macros/latex/contrib/microtype/microtype.pdf>.

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