

Calcolo delle Variazioni

simple slides

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Calcolo differenziale

Sia X uno spazio di Banach reale.

Punti critici

Un punto u è un punto critico se

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$$I'(u) = 0$$

Basics

- The document is included in a file (say `file.tex`) and it can be processed by `pdfcsplain file` command.

- The header of the document should be:

```
\input ctuslides2 % slides macro (in version 2)
\worktype[B/EN]   % type of the work (B,M,D,O) and language (CZ,SK,EN)
\faculty{F3}      % the faculty in short
\department {Department of Mathematics} % depart
ment

\slideshow        % begin of the document
... document ...
\pg.
```

- The document must be finished by `\pg` followed by period.
- You need OPmac in the version May 2015 or newer. Available at <http://petr.olsak.net/opmac-e.html>.
- The work type should be set similarly as in **CTUstyle**.
- Only `\worktype`, `\faculty` and `\department` work here. No more declaration sequences from **CTUstyle**.

The structural commands

- You can type `*` for starting of the item.
- Nested items lists (second and more level) are created in the `\beginitems...\enditems` environments.
- The slide titles are created by `\sec Text` followed by empty line. You can use `\secc Text` similarly.
- The title page (first slide) can be special if `\tit Title` (followed by empty line) is used here.
- The `\subtit Author name etc.` (followed by empty line) can be used after `\tit` at the first slide.
- The paragraph texts are ragged right.
- You can use `\nl` for new line in the paragraph.
- You can use `\pg` followed by `+` or `,` or `.` for new slide.
- The page-bar in the right corner is clickable at it will be created correctly after second pass of the \TeX run.

Next page (next slide)

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 - the character `+` – next page keeps the same text and a next text is added (usable for partially uncovering of ideas),

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- Summary:

<code>\pg+</code>	<code>... uncover next text</code>
<code>\pg;</code>	<code>... next page</code>
<code>\pg.</code>	<code>... the end of the document</code>

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- Summary:
 - `\pg+` ... uncover next text
 - `\pg;` ... next page
 - `\pg.` ... the end of the document
- If the control sequence `\slideshow` is removed (or commented out) from the beginning of the document then `\pg+` sequences are deactivated. This is usable for printing version of the document.
- Another variant is `\pg=` (i. e. `\pg` followed by `=`). It does not create new page, but it is used for verbatim environment (see next slide...).

Verbatim

Verbatim in paragraph

- In-line verbatim doesn't work with declared `\activettchar` when `\slideshow` is used.
- You can use the `\code` sequence described in OPmac trick 0102, see <http://petr.olsak.net/opmac-tricks-e.html#code>.
- The argument of the `\code` sequence is printed verbatim, but special T_EX characters must be preceded by backslash. I. e. backslash is printed when it is doubled.

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Multi-line verbatim

- Multi-line verbatim is printed by `\begtt...\endtt` but `\pg=` must precede:
`\pg=\begtt`
`... verbatim text ...`
`\endtt`

Example of multi-line verbatim

The source code includes:

```
\pg=\Red\typosize[13/15]\begtt
#include <stdio.h>
int main();
{
    printf("Hello world!\n");
}
\endtt
```

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```

and the result is:

```
#include <stdio.h>
int main();
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    printf("Hello world!\n");
}
```

Note that local declarations can be inserted between `\pg=` and `\begtt`.

Limits of the `\pg+` sequence

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What to do?

- If you need to set a different font size by `\typo{size}` or `\typo{scale}` then you this size globally and you can use `\pg+` inside different size of the font. Finally, you have to return back to normal size by the `\normal{size}` sequence.
- If you need to partially uncover the multi-line verbatim then you can use:

```
\pg=\begtt
... first line of the code ...
\endtt \pg+ \pg=\begtt
... second line of the code ...
\endtt \pg+
```
- If you need to uncover the texts more ingenious then you can use macros `\use` or `\pshow` (see next slide...)

Uncovering by `\use` and `\pshow`

- The macro `\use{condition}\action` runs `\action` only if the number of the slide layer passes the given condition.
- The macro `\pshow X` (means partially show) prints the following text to the end of the current group:
 - invisible, if the number of the slide layer is less than X,
 - red, if the number of slide the layer is equal to X,
 - normal (black), if the number of slide layers is greater than X.
- The number of the slide layer is reset to one after each `\pg;` and it is incremented by one after each `\pg+`.
- The `\pshow` macro is defined by the `\use` macro as follows:

```
\def\pshow#1{\use{=#1}\Red \use{<#1}\White \ignorespaces}
```

You can redefine it as you wish.

An example of \pshow usage

\secc Ideas in special order

* {\pshow1 First idea}
* {\pshow3 Second idea}
* {\pshow2 Third idea}

\pg+\pg+\pg+

\secc A formula

Consider

\$\$

$E = {\pshow5 m}{\pshow6 c^2}$

\$\$

\pg+\pg+\pg+

And that is all.

\pg;

Ideas in special order

● First idea

●

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Tables, pictures

- Tables can be created by `\table` or `\ctable` macro.
- Pictures can be included by `\inspic` macro.
- See OPmac documentation for more details.
- The centering would be done by the `\centerline{}` macro:
- Example:

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- See OPmac documentation for more details.
- The centering would be done by the `\centerline{}` macro:
- Example:

```
\centerline{\picw=5cm \inspic cmelak1.jpg }
```



Comparison CTUslides with Beamer*

The L^AT_EX package Beamer gives much more features and many themes are prepared for Beamer, **but**

- the user of Beamer is forced to *program* his/her document using dozens of `\begin{foo}` and `\end{foo}` and many another programming constructions,
- on the other hand, plain T_EX gives you a possibility to simply *write* your document with minimal markup. The result is more compact.

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- on the other hand, you need to read only ten slides** and you are ready to use **CTUslides**.
- A notice for programmers: to create another individual typographical design for L^AT_EX is much more complicated than to do the same in plain T_EX. And you need to seriously understand plain T_EX if you want to do something more complicated in L^AT_EX.

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Questions?