Prosper

A slide class for LaTeX

Trond Varslot

`varslot@math.ntnu.no`

Norwegian University of Science and Technology

This talk ...

will

- introduce prosper

- show *some* of the possibilities with prosper

- give examples which can be useful later

will not

- teach you LaTeX

- teach you how to write a good talk

- require any mathematical knowledge

What is Prosper?

- a LaTeX class for writing transparencies

What is Prosper?

- a LaTeX class for writing transparencies
- written on top of the *seminar* class

What is Prosper?

- a LaTeX class for writing transparencies
- written on top of the *seminar* class
- uses the *PSTricks* class to generate graphics

What is Prosper?

- a LaTeX class for writing transparencies
- written on top of the *seminar* class
- uses the *PSTricks* class to generate graphics
- aims at offering an environment for easily creating slides for both presentations with an overhead projector and a video projector

What is Prosper?

- a LaTeX class for writing transparencies
- written on top of the *seminar* class
- uses the *PSTricks* class to generate graphics
- aims at offering an environment for easily creating slides for both presentations with an overhead projector and a video projector
- slides prepared for a presentation with a computer and a video projector may integrate animation effects and incremental display

Why use Prosper?

- using LaTeX makes sense when you want to reuse some material of an article written in LaTeX for your slides

Why use Prosper?

- using LaTeX makes sense when you want to reuse some material of an article written in LaTeX for your slides

- benefits from the quality of LaTeX formatting at no extra work

Why use Prosper?

- using LaTeX makes sense when you want to reuse some material of an article written in LaTeX for your slides

- benefits from the quality of LaTeX formatting at no extra work

- **possibility to easily write slides with or without animation effects**

Why use Prosper?

- using LaTeX makes sense when you want to reuse some material of an article written in LaTeX for your slides

- benefits from the quality of LaTeX formatting at no extra work

- possibility to easily write slides with or without animation effects

- choose visual appearance among many predefined styles (or write your own)

Why use Prosper?

- using LaTeX makes sense when you want to reuse some material of an article written in LaTeX for your slides

- benefits from the quality of LaTeX formatting at no extra work

- possibility to easily write slides with or without animation effects

- choose visual appearance among many predefined styles (or write your own)

- free to prepare and to present slides on any platform where LaTeX and a PDF viewer are available

A minimal prosper document

```
\documentclass{prosper}
\author{Trond Varslot}
\title{Prosper}
\date{December 2002}

\subtitle{A slide class for \LaTeX}
\institution{Norwegian University of Science and Technology}
\email{varslot@math.ntnu.no}

\begin{document}
\maketitle
\begin{slide}{Title}
... content ...
\end{slide}
\end{document}
```
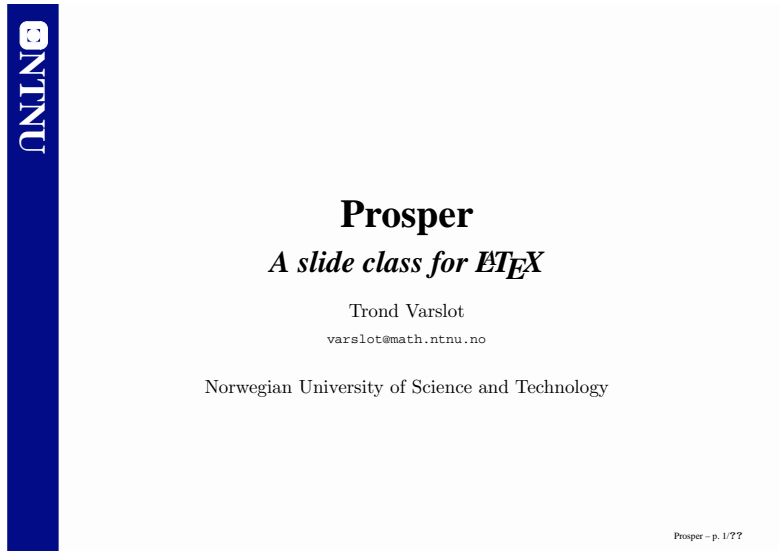
A minimal result

Prosper

A slide class for LaTeX

Trond Varslot

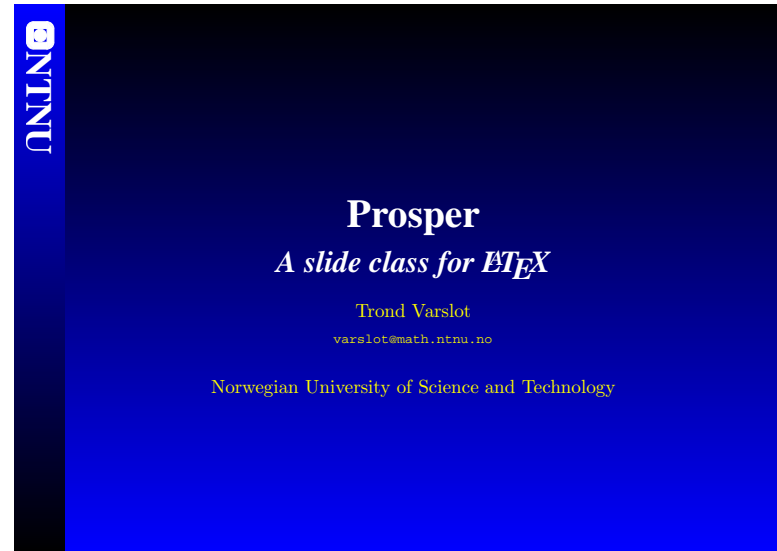`varslot@math.ntnu.no`

Norwegian University of Science and Technology

Title

... content ...

NTNU template


```
\documentclass[
  nocolorBG,
  slideColor,
  ntnu
]{prosper}
```



```
\documentclass[
  noFooter,
  colorBG,
  slideColor,
  ntnu
]{prosper}
```

A simple slide

```
\begin{slide}[Dissolve]{\label{anatomyslide}The anatomy of a slide}
\begin{itemize}
  \item
    We may use different transitions between slides:
    \texttt{Split, Blinds, Box, Wipe, Dissolve, Glitter, Replace}
  \item
    References to slide number \ref{anatomyslide} is done in the standard
    {\LaTeX} way.
  \item
    Content must fit on one slide.
  \end{itemize}
\end{slide}
```

The anatomy of a slide

- We may use different transitions between slides: `Split, Blinds, Box, Wipe, Dissolve, Glitter, Replace`

- References to slide number 9 is done in the standard LaTeX way.

- Content must fit on one slide.

Incremental display

A slide may be displayed incrementally using `overlays`.

Incremental display

A slide may be displayed incrementally using `overlays.`

- We need to determine how may steps we want to use.

Incremental display

A slide may be displayed incrementally using `overlays`.

- We need to determine how may steps we want to use.

- The content on each step may be specified using `fromSlide`, `untilSlide` and `onlySlide` commands

Incremental display

A slide may be displayed incrementally using `overlays`.

- We need to determine how may steps we want to use.

- The content on each step may be specified using `fromSlide`, `untilSlide` and `onlySlide` commands

- Stared versions exist

Incremental display

A slide may be displayed incrementally using `overlays`.

- We need to determine how may steps we want to use.

- The content on each step may be specified using `fromSlide`, `untilSlide` and `onlySlide` commands

- Stared versions of the commands exist

- Remember that at each step the relevant LaTeXcode must be complete

Overlay example

```
\overlays{3}{
  \begin{slide}{Title}

    Some \onlySlide{2}{more}\onlySlide*{3}{good} content

    \begin{itemize}
      \item First item
      \fromSlide*{2}{\item Second item}
      \fromSlide*{3}{\item Third item}
    \end{itemize}
    Text here aswell.
  \end{slide}
}
```

Title

Some content goes here

- First item

Text here aswell.

Title

Some more content goes here

- First item
- Second item

Text here aswell.

Title

Some good content goes here

- First item

- Second item

- Third item

Text here aswell.

Incremental display of equations

```
\begin{align*}
  \fromSlide{5}{{\lim_{N\uparrow\infty}}}
  1
  \fromSlide{2}{{+\frac{1}{4}}}
  \fromSlide{3}{{+\frac{1}{9}}}
  \fromSlide{4}{{\hdots +\frac{1}{N^2}}}
  \fromSlide{5}{{=\sum_{k=1}^{\infty}\frac{1}{n^2}}}
  \fromSlide{6}{{=\frac{\pi^2}{6}}}
\end{align*}
```

Example

Normal version:

$$1$$

Stared version:

$$1$$

Example

Normal version:

$$1 + \frac{1}{4}$$

Stared version:

$$1 + \frac{1}{4}$$

Example

Normal version:

$$1 + \frac{1}{4} + \frac{1}{9}$$

Stared version:

$$1 + \frac{1}{4} + \frac{1}{9}$$

Example

Normal version:

$$1 + \frac{1}{4} + \frac{1}{9} \dots + \frac{1}{N^2}$$

Stared version:

$$1 + \frac{1}{4} + \frac{1}{9} \dots + \frac{1}{N^2}$$

Example

Normal version:

$$\lim_{N \uparrow \infty} 1 + \frac{1}{4} + \frac{1}{9} \ldots + \frac{1}{N^2} = \sum_{k=1}^{\infty} \frac{1}{k^2}$$

Stared version:

$$\lim_{N \uparrow \infty} 1 + \frac{1}{4} + \frac{1}{9} \ldots + \frac{1}{N^2} = \sum_{k=1}^{\infty} \frac{1}{k^2}$$

Example

Normal version:

$$\lim_{N\uparrow\infty} 1 + \frac{1}{4} + \frac{1}{9} \ldots + \frac{1}{N^2} = \sum_{k=1}^{\infty} \frac{1}{k^2} = \frac{\pi^2}{6}$$

Stared version:

$$\lim_{N\uparrow\infty} 1 + \frac{1}{4} + \frac{1}{9} \ldots + \frac{1}{N^2} = \sum_{k=1}^{\infty} \frac{1}{k^2} = \frac{\pi^2}{6}$$

Nodes, lines and arrows

The package `pst-node` contain lots of useful things:

Define a node: `\rnode{label}{text}`

Define a connection: `\ncarc{label1}{label2}`

Example:

```
\begin{slide}{Example}

  \begin{align*}
    \rnode{A}{1}\neq \rnode{B}{2}
  \end{align*}
  One may point out the \rnode{C}{first} number
  and the \rnode{D}{last} number by two simple commands

  \ncarc[linecolor=red,linestyle=solid,arrows=->]{C}{A}
  \ncarc[linecolor=green,linestyle=dashed,arrows=<->]{D}{B}
\end{slide}
```

Example

$$1 \neq 2$$

One may point out the first number and the last number by two simple commands

Acoustic wave propagation

Forward propagation of *acoustic pressure* in soft tissue may be modelled by the equation

$$\frac{\partial p}{\partial z} = \boxed{\frac{c}{2} \int_0^t \nabla_\perp^2 p \, d\tau} + \epsilon \frac{\beta_n \sqrt{\kappa}}{c^2} p \frac{\partial p}{\partial t} + \epsilon \frac{1}{2c} \frac{\partial}{\partial t} L(p)$$

Diffraction

c : speed of sound

Acoustic wave propagation

Forward propagation of *acoustic pressure* in soft tissue may be modelled by the equation

$$\frac{\partial p}{\partial z} = \frac{c}{2} \int_0^t \nabla_\perp^2 p \, d\tau + \boxed{\epsilon \frac{\beta_n \sqrt{\kappa}}{c^2} p \frac{\partial p}{\partial t}} + \epsilon \frac{1}{2c} \frac{\partial}{\partial t} L(p)$$

Non-linear effects

β_n : tissue nonlinearity factor

κ : compressibillity

c : speed of sound

ϵ : scaling constant

Acoustic wave propagation

Forward propagation of *acoustic pressure* in soft tissue may be modelled by the equation

$$\frac{\partial p}{\partial z} = \frac{c}{2} \int_0^t \nabla_\perp^2 p \, d\tau \; + \; \epsilon \frac{\beta_n \sqrt{\kappa}}{c^2} p \frac{\partial p}{\partial t} \; + \; \boxed{\epsilon \frac{1}{2c} \frac{\partial}{\partial t} L(p)}$$

Energy loss

$L(\cdot)$: convolution operator

c : speed of sound

ϵ : scaling constant

Acoustic wave propagation

Forward propagation of *acoustic pressure* in soft tissue may be modelled by the equation

$$\frac{\partial p}{\partial z} = \frac{c}{2} \int_0^t \nabla_\perp^2 p \, d\tau \; + \; \epsilon \frac{\beta_n \sqrt{\kappa}}{c^2} p \frac{\partial p}{\partial t} \; + \; \epsilon \frac{1}{2c} \frac{\partial}{\partial t} L(p)$$

The approximation

$$\nabla^2 \approx \nabla_\perp^2 = \frac{\partial^2}{\partial x^2} + \frac{\partial^2}{\partial y^2}$$

is only good for weakly focused sound beams.

Timed slides

You may automatically advance to the next slide using

```
\hypersetup{pdfpageduration=n}
```

where n is the number of seconds before going to the next slide. You go to the next slide.
This requires you to instruct AcroRead to allow automatic advancement.

$$\text{Edit} \ \rightarrow \ \text{Preferences} \ \rightarrow \ \text{Full Screen}$$

Tick 'Advance Every', and set it to a fairly large number (1000).

Example of pdfpageduration

- Item 1

Example of pdfpageduration

- Item 1
- Item 2

Example of pdfpageduration

- Item 1
- Item 2

- Item 9

Example of pdfpageduration

- Item 1
- Item 2

  - Item 4
- Item 9

Example of pdfpageduration

- Item 1
- Item 2

  - Item 4
  - Item 5
- Item 9

Example of pdfpageduration

- Item 1
- Item 2
- Item 3
    - Item 4
    - Item 5
- Item 9

Example of pdfpageduration

- Item 1
- Item 2
- Item 3
    - Item 4
    - Item 5
- Item 9
- Item 7

Example of pdfpageduration

- Item 1
- Item 2
- Item 3
    - Item 4
    - Item 5
    - Item 6
- Item 9

Example of pdfpageduration

- Item 1
- Item 2
- Item 3
  - Item 4
  - Item 5
  - Item 6
  - Item 7
- Item 9

Hyperref

The package `hyperref` is usefull for other things aswell

- Making a hyperlink to an external page: NTNU

  `\href{http://www.ntnu.no}{NTNU}`

- Running an external command:xclock

  `\href{run:/store/bin/xclock}{xclock}`

- Making a reference to other places in your document: next slide using a combination of

  `\hyperlink{MULTIMEDIA}{next slide}`

  `\hypertarget{MULTIMEDIA}{Using}`

Multimedia

This may also be used to open sound and video clips in external programs:

```
\href{run:bethov.wav}{sound}
\href{run:phantom_circles.mpg}{video}
```

Default programs are used. Unix users need to have this defined in a `.mailcap`:

```
audio/wav;sox %s
video/mpg;mpeg_play %s
video/mpeg;mpeg_play %s
video/avi;mplayer %s
```

Video inside Acroread

(Run externaly) As far as I know, this only works on Windows and Macintosh versions of Acroread. You also need Quicktime or MS Video installed.

Compilation

- Lots of this is accomplished using `PSTricks`.

  ```
  latex file.tex --> dvips -o file.ps fil --> ps2pdf fil.ps
  ```

  Other converters from ps to pdf also work.

- Prosper is designed for A4 paper. Make sure to instruct dvips to create an A4 size document. On Unix:

  ```
  GS_OPTIONS="-sPAPERSIZE=a4"
  ```

- Make sure you use Type1 fonts.

  ```
  dvips -Pcmz -Pamz -o fil.ps fil
  ```

  usually fixes this. You need Type1 fonts installed.

Finally ...

- Use the CVS-version of prosper. (SourceForge homepage)

- Be aware of the *background bug* in AcroRead 5

- Choose a style before writing the presentation

- Yes, the LATEXsource for this presentation will be available at my homepage.