Основи на LaTeX

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12 март 2014 г.

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Packages for presentations

- Seminar
- Beamer
- Powerdot
- Prosper
- ...

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```
\documentclass{...}
...
\begin{...}
...
\end{...}

... = slide, frame
```

Beamer

```
\documentclass[options]{beamer}
Various commands
\begin{frame}[Frame options]
...
\end{frame}
```

Options

- `t,c,b` – begin text from top, center, bottom
- `mathserif ot mathsans`
- `\documentclass[xcolor={list of options}]{beamer};` example `table`; `pst` when using pstricks
- `\documentclass[hyperref={listof options}]{beamer};` example `bookmarks=false`

Frame options

- t – Top aligned text
- plain – While frame
- shrink – useful to include lot of text

Title of the Presentation

```
\title[2nd National Congress on Physical Sciences]
{
Exact results in the theory of phase transitions
}

%\subtitle
%{Presentation Subtitle} % (optional)

\author[H. Chamati]{Hassan Chamati}

\institute[ISSP--BAS]
{Institute of Solid State Physics,
Bulgarian Academy of Sciences
\\[.3cm]
\includegraphics[height=1.2cm,width=1.2cm]{logo_front.jpg}}

\date{September 29, 2013}

\subject{Talks}
% This is only inserted into the PDF information catalog.
% Can be left out.
\keywords{thermodynamics}
```

```
\begin{frame}
\titlepage
...
More information
\end{frame}
```

Table of contents

```
\begin{frame}
        \frametitle{Outline}
        \tableofcontents
%       \tableofcontents[pausesections]
\end{frame}
```

Hightlight the current section

```
\AtBeginSection[]
{
  \begin{frame}
    \frametitle{Outline}
    \tableofcontents[currentsection]
  \end{frame}
}
```

Sections & subsections

```
\section{...}
\subsection{...}
```

A simple presentation document

```
\documentclass[t]{beamer}
\begin{document}
\title[...]{...}
\auhtor[...]{...}
\date[...]{...}
\begin{frame}
        \titlepage
        ...
        More information
\end{frame}
\begin{frame}
        \frametitle{Outline}
        \tableofcontents
\end{frame}
\section{...}
\begin{frame}
        \frametitle{This is the first frame}
        ...
\end{frame}

\begin{frame}
        \frametitle{This is the second frame}
        \framesubtitle{More information}
        ...
\end{frame}

...
\end{document}
```

Themes

```
\documentclass[t]{beamer}
\usetheme{Madrid}
\begin{document}
...
\end{document}
```

More themes

Antibes	Darmstadt	Ilmenau	Marburg	Singapore
Bergen	Dresden	JuanLesPins	Montpellier	Szeged
Berkeley	Frankfurt	Luebeck	PaloAlto	Warsaw
Berlin	Goettingen	Madrid	Pittsburgh	boxes
Copenhagen	Hannover	Malmoe	Rochester	default

Color themes

```
\documentclass[t]{beamer}
\usetheme{Madrid}
\colortheme{beaver}
...
\begin{document}
...
\end{document}
```

default	dolphin	rose
albatross	dove	seagull
beaver	fly	seahorse
beetle	lily	whale
crane	orchid	wolverine

Examples

Mardid

On the Complexity of SNP Block Partitioning Under the Perfect Phylogeny Model

Jens Gramm[1] Tzvika Hartman[2] Till Nierhoff[3]
Roded Sharan[4] Till Tantau[5]

[1]Universität Tübingen, Germany
[2]Bar-Ilan University, Ramat-Gan, Israel
[3]International Computer Science Institute, Berkeley, USA
[4]Tel-Aviv University, Israel
[5]Universität zu Lübeck, Germany

Workshop on Algorithms in Bioinformatics, 2006

Outline

Examples

Mardid

Mathematical modeling in materials science

H. Chamati

Institute of Solid State Physics, Bulgarian Academy of sciences

May 18, 2013

Collaboration:
N.I. Papanicolaou, G.A. Evangelakis (Greece)
D. A. Papaconstantopoulos, Y. Mishin (USA)
K. Gaminchev

Materials modeling
Molecular dynamics simulation

Example: Leap–frog scheme

For small time steps ($\delta t \ll 1$)

$$\mathbf{v}_i\left(t+\tfrac{1}{2}\delta t\right) = \mathbf{v}_i\left(t-\tfrac{1}{2}\delta t\right) + \frac{\mathbf{F}_i(t)}{m_i}\delta t$$

and likewise

$$\mathbf{r}_i\left(t+\delta t\right) = \mathbf{r}_i(t) + \mathbf{v}_i\left(t+\tfrac{1}{2}\delta t\right)\delta t$$

$\Downarrow$

Coordinates ($\mathbf{r}_i$) & velocities ($\mathbf{v}_i$)

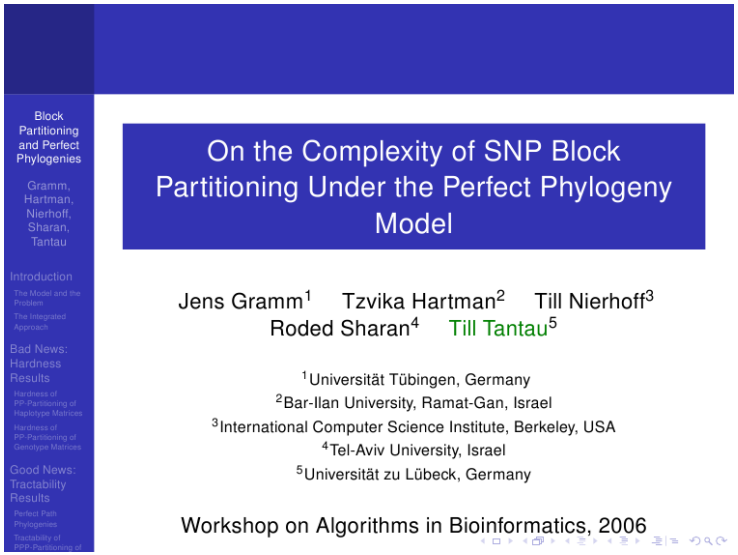
$\Downarrow$

Properties – structure, phonons, diffusion, ...


```
\usetheme{Madrid}
\usecolortheme[named=orange]{structure}
```

Examples

Berkeley



Block Partitioning and Perfect Phylogenies

Gramm, Hartman, Nierhoff, Sharan, Tantau

On the Complexity of SNP Block Partitioning Under the Perfect Phylogeny Model

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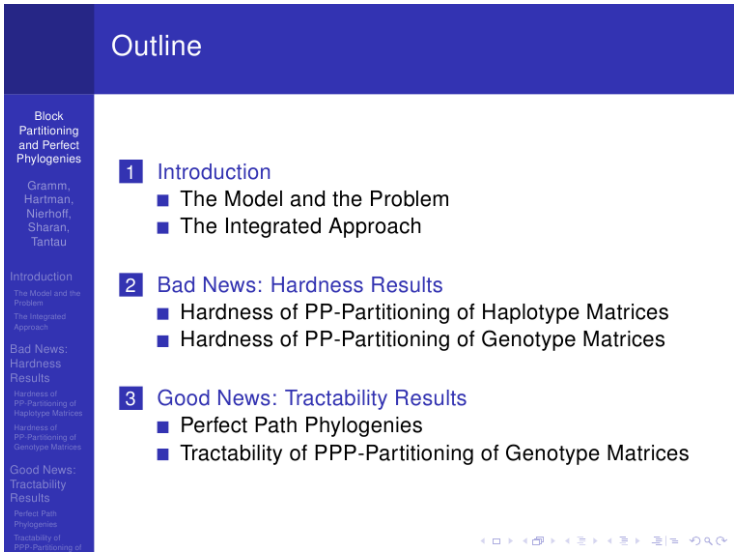
Workshop on Algorithms in Bioinformatics, 2006



Outline

1 Introduction
- The Model and the Problem
- The Integrated Approach

2 Bad News: Hardness Results
- Hardness of PP-Partitioning of Haplotype Matrices
- Hardness of PP-Partitioning of Genotype Matrices

3 Good News: Tractability Results
- Perfect Path Phylogenies
- Tractability of PPP-Partitioning of Genotype Matrices

Slide transitions

- Transblindshorizontal – blinds pulled out horizontally
- Transblindsvertical – blinds pulled out vertically
- Transboxin – moving the slide from all corner to the center
- Transboxout – from the center to the corners
- ...

Animations

```
\begin{frame}
\frametitle{Some background}
We start our discussion with some concepts.

\pause

The first concept we introduce ...
\end{frame}
```

Text animation

```
\begin{itemize}
  \item This one is always shown
  \item<1-> The first time (i.e. as soon as the slide loads)
  \item<2-> {\blue The second time}
  \item<1-> Also the first time
  \only<1-1> {\red This one is shown at the first time, but
  it will hide soon (on the next event after the
  slide loads).}
\end{itemize}
```

Text animation

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```

- This one is always shown
- The first time (i.e. as soon as the slide loads)
- The second time
- Also the first time.

Text animation

```
\begin{itemize}[<+->]
\item The truths of arithmetic which are independent of PA
in some sense themselves ‘contain essentially
\color{blue}{hidden higher-order}, or infinitary,
concepts’???
\item ‘Truths in the language of arithmetic which \ldots
\item That suggests stronger version of Isaacson’s thesis.
\end{itemize}
```

Text animation

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- The truths of arithmetic which are independent of PA in some sense themselves ‘contain essentially hidden higher-order, or infinitary, concepts’???
- ‘Truths in the language of arithmetic which …
- That suggests stronger version of Isaacson’s thesis.

Replacing text

```
\begin{itemize}
\item \ldots
\item \alt<2>{{\blue \TeX studio, LaTeX\ made comfortable}}{\TeX studio, LaTeX\ made comfortable};
\visible<2>{http://texstudio.sourceforge.net}
\item \ldots
\end{itemize}
```

- ...
- TeXstudio, LaTeX made comfortable;
- ...

Replacing text

```
\begin{itemize}
\item \ldots
\item \alt<2>{{\blue \TeX studio, LaTeX\ made
comfortable}}{\TeX studio, LaTeX\ made comfortable};
\visible<2>{http://texstudio.sourceforge.net}
\item \ldots
\end{itemize}
```

- ...
- TEXstudio, LaTeX made comfortable;
  http://texstudio.sourceforge.net
- ...

Visible text on some slides

```
\begin{itemize}
\item periodic:
$s(\mathbf{r},\alert{1})=s(\mathbf{r},\alert{L+1})$
\visible<2>{
\qquad \alert{\Rightarrow} \qquad
        $\Delta = -\frac{2\zeta(3)}{5\pi}$}

\item \ldots
\end{itemize}
```

Visible text on some slides

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\begin{itemize}
\item periodic:
$s(\mathbf{r},\alert{1})=s(\mathbf{r},\alert{L+1})$
\visible<2>{
\qquad \alert{\Rightarrow} \qquad
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\item \ldots
\end{itemize}
```

- periodic: $s(\boldsymbol{r}, 1) = s(\boldsymbol{r}, L + 1)$
- ...

Visible text on some slides

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\begin{itemize}
\item periodic:
$s(\mathbf{r},\alert{1})=s(\mathbf{r},\alert{L+1})$
\visible<2>{
\qquad \alert{\Rightarrow} \qquad
        $\Delta = -\frac{2\zeta(3)}{5\pi}$}

\item \ldots
\end{itemize}
```

- periodic: $s(r, 1) = s(r, L + 1) \quad \Rightarrow \quad \Delta = -\frac{2\zeta(3)}{5\pi}$
- ...

Columns

- ...
- ...
- ...

```
\begin{columns}[t]
\column[T]{0.5\textwidth}
...
\column[T]{0.5\textwidth}
\begin{center}
\includegraphics[scale=0.4]
{frog.jpg}

Kermit the Frog
\end{center}
\end{columns}
```

Kermit the Frog

Blocks

The Madrid Theme

Mathematical modeling in materials science

H. Chamati

Institute of Solid State Physics, Bulgarian Academy of sciences

May 18, 2013

Collaboration:
N.I. Papanicolaou, G.A. Evangelakis (Greece)
D. A. Papaconstantopoulos, Y. Mishin (USA)
K. Gaminchev

H. Chamati (ISSP-BAS) May 18, 2013 1 / 29

```
\begin{block}{Results}
\rowcolors[]{1}
{blue!20}{blue!10}
\begin{tabular}{l|cccc}
Class & A & B & C & D \\\hline
X & 1 & 2 & 3 & 4 \pause\\
Y & 3 & 4 & 5 & 6 \pause\\
```

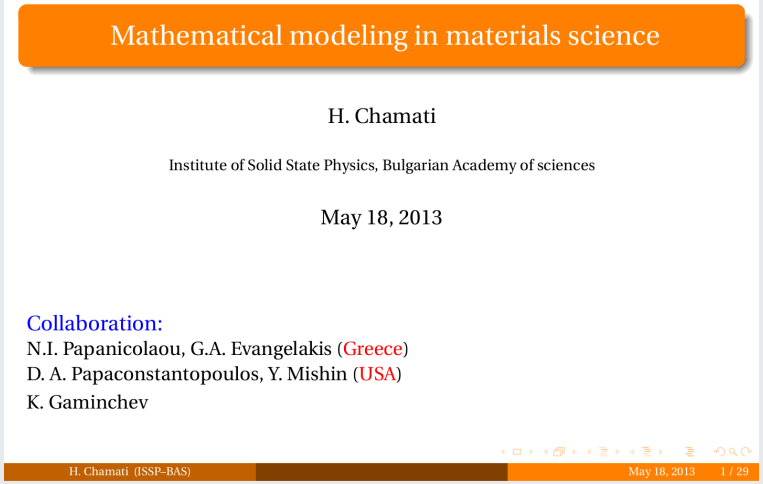
Results

Class	A	B	C	D
X	1	2	3	4

```
\begin{block}{The Madrid theme}
\includegraphics{madrid1.png}
\end{block}
```

Blocks

The Madrid Theme




```
\begin{block}{Results}
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X & 1 & 2 & 3 & 4 \pause\\
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Blocks

The Madrid Theme

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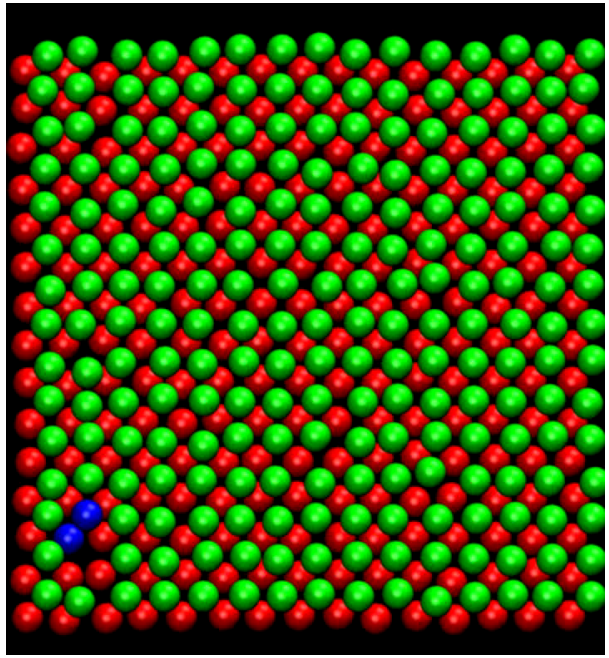
Class & A & B & C & D \\\hline
X & 1 & 2 & 3 & 4 \pause\\
Y & 3 & 4 & 5 & 6 \pause\\
```

Results

Class	A	B	C	D
X	1	2	3	4
Y	3	4	5	6
Z	5	6	7	8

```
\begin{block}{The Madrid theme}
\includegraphics{madrid1.png}
\end{block}
```



Papanicolau and HC Comput. Mater. Sci. (2009)

This requires the `multimedia.sty` package.

```
\movie[poster,externalviewer]%
{\includegraphics[scale=0.25]{ndig.eps}}{ndig.mpg}

\centerline{\scriptsize Papanicolau and \alert{HC} ...}
```