Основи на LaTeX

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05 март 2014 г.

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Color models

- **rgb** – red, green and blue
- **cmy(k)** – cyan, magenta and yellow, and (key ≡ black)
- **hsb** – hue, saturation and value or brightness
- **gray** – **black-and-white**, (shades of gray)
- **wave** – light color wavelength

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- **wave** – light color wavelength

Model	white	black	gray
rgb	(1,1,1)	(0,0,0)	$\left(\frac{1}{2}, \frac{1}{2}, \frac{1}{2}\right)$
cmy	(0,0,0)	(1,1,1)	$\left(\frac{1}{2}, \frac{1}{2}, \frac{1}{2}\right)$

Basic colors

```
\usepackage[rgb,usenames,dvipsnames,svgnames,table]{xcolor}
```

black *	magenta *
blue *	olive
brown	orange
cyan *	pink
darkgray *	purple
gray *	red *
green *	teal
lightgray *	violet
lime	white *
	yellow *

Starred colors may be used as a command. For example to turn on red you need to write `\red`

Additional colors

- dvipsnames/dvipsnames* loads a set of 68 **cmyk** colors
- svgnames/svgnames* loads a set of 151 **rgb** color names
- x11names/x11names* loads set 317 **rgb** color names

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Load `x11namees` & `svgnames` to access all 752 color names of rgb.txt

X11/W3C color names

Color	Name	Hex (RGB)	Red (RGB)	Green (RGB)	Blue (RGB)	Hue (HSL/HSV)	Satur (HSL)	Light (HSL)	Satur (HSV)	Value (HSV)	Alternative
	Alice Blue	#F0F8FF	94%	97%	100%	208°	100%	97%	6%	100%	
	Antique White	#FAEBD7	98%	92%	84%	34°	78%	91%	14%	98%	
	Aqua	#00FFFF	0%	100%	100%	180°	100%	50%	100%	100%	Cyan
	Aquamarine	#7FFFD4	50%	100%	83%	160°	100%	75%	50%	100%	
	Azure	#F0FFFF	94%	100%	100%	180°	100%	97%	6%	100%	
	Beige	#F5F5DC	96%	96%	86%	60°	56%	91%	10%	96%	
	Bisque	#FFE4C4	100%	89%	77%	33°	100%	88%	23%	100%	
	Black	#000000	0%	0%	0%	0°	0%	0%	0%	0%	
	Blanched Almond	#FFEBCD	100%	92%	80%	36°	100%	90%	20%	100%	
	Blue	#0000FF	0%	0%	100%	240°	100%	50%	100%	100%	
	Blue Violet	#8A2BE2	54%	17%	89%	271°	76%	53%	81%	89%	
	Brown	#A52A2A	65%	16%	16%	0°	59%	41%	75%	65%	
	Burlywood	#DEB887	87%	72%	53%	34°	57%	70%	39%	87%	
	Cadet Blue	#5F9EA0	37%	62%	63%	182°	26%	50%	41%	63%	
	Chartreuse	#7FFF00	50%	100%	0%	90°	100%	50%	100%	100%	
	Chocolate	#D2691E	82%	41%	12%	25°	75%	47%	86%	82%	
	Coral	#FF7F50	100%	50%	31%	16°	100%	66%	69%	100%	
	Cornflower	#6495ED	39%	58%	93%	219°	79%	66%	58%	93%	
	Cornsilk	#FFF8DC	100%	97%	86%	48°	100%	93%	14%	100%	
	Crimson	#DC143C	86%	8%	24%	348°	83%	47%	91%	86%	
	Cyan	#00FFFF	0%	100%	100%	180°	100%	50%	100%	100%	Aqua
	Dark Blue	#00008B	0%	0%	55%	240°	100%	27%	100%	55%	
	Dark Cyan	#008B8B	0%	55%	55%	180°	100%	27%	100%	55%	
	Dark Goldenrod	#B8860B	72%	53%	4%	43°	89%	38%	94%	72%	
	Dark Gray	#A9A9A9	66%	66%	66%	0°	0%	66%	0%	66%	Dark Grey
	Dark Green	#006400	0%	39%	0%	120°	100%	20%	100%	39%	
	Dark Khaki	#BDB76B	74%	72%	42%	56°	38%	58%	43%	74%	

Defining ``new'' colors

```
- \definecolor{red}{rgb}{1,0,0},
- \definecolor{red}{rgb/cmyk}{1,0,0/0,1,1,0},
- \definecolor{red}{hsb:rgb/cmyk}{1,0,0/0,1,1,0},
- \definecolor[named]{Black}{cmyk}{0,0,0,1},
- \definecolor{myblack}{named}{Black}
```

Examples

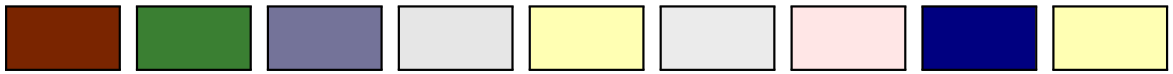
```
\definecolor{Brown}{cmyk}{0,0.81,1,0.60}
\definecolor{OliveGreen}{cmyk}{0.64,0,0.95,0.40}
\definecolor{CadetBlue}{cmyk}{0.62,0.57,0.23,0}
\definecolor{lightlightgray}{gray}{0.9}
\definecolor{LightYellow}{rgb}{1,1,0.7}
\definecolor{LightGray}{rgb}{0.92,0.92,0.92}
\definecolor{LightRed}{rgb}{1.,0.9,0.9}
\definecolor{LightBlue}{rgb}{0.,0.,0.5}
\definecolor{shadecolor}{rgb}{1,1,0.7}
```

Defining ``new'' colors

```
- \definecolor{red}{rgb}{1,0,0},
- \definecolor{red}{rgb/cmyk}{1,0,0/0,1,1,0},
- \definecolor{red}{hsb:rgb/cmyk}{1,0,0/0,1,1,0},
- \definecolor[named]{Black}{cmyk}{0,0,0,1},
- \definecolor{myblack}{named}{Black}
```

Examples

```
\definecolor{Brown}{cmyk}{0,0.81,1,0.60}
\definecolor{OliveGreen}{cmyk}{0.64,0,0.95,0.40}
\definecolor{CadetBlue}{cmyk}{0.62,0.57,0.23,0}
\definecolor{lightlightgray}{gray}{0.9}
\definecolor{LightYellow}{rgb}{1,1,0.7}
\definecolor{LightGray}{rgb}{0.92,0.92,0.92}
\definecolor{LightRed}{rgb}{1.,0.9,0.9}
\definecolor{LightBlue}{rgb}{0.,0.,0.5}
\definecolor{shadecolor}{rgb}{1,1,0.7}
```



Combining colors

40% + 60% = `\color{green!40!yellow}`

40% + 60% = `\color{red!60!yellow}`

80% + 20% = `\color{red!80!green}`

40% + 60% = `\color{red!40!green}`

40% + 60% = `\color{red!40!blue}`

50% + 50% = `\color{red!50!blue}`

50% + 50% = `\color{green!50!blue}`

40% + 60% = `\color{green!40!blue}`

40% + 60% = `\color{yellow!40!blue}`

70% + 30% = `\color{yellow!70!blue}`

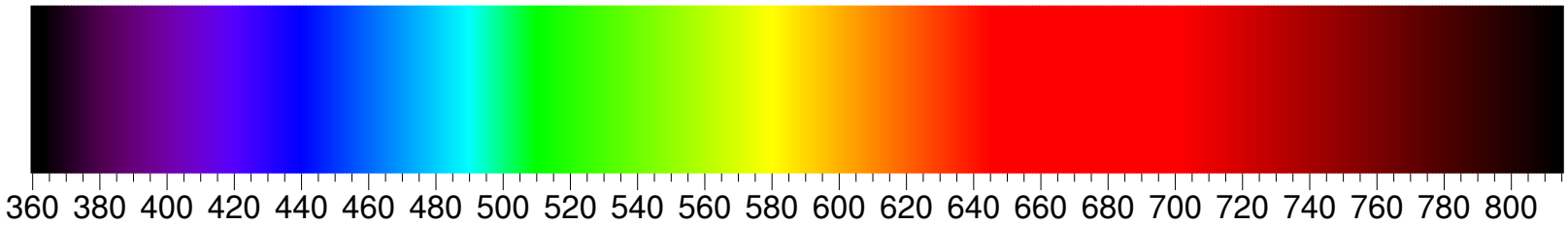
3 x + 2 x + 1 x =

```
\color{rgb:yellow!40!blue,3;-yellow!40!blue,2;red,1}
```

Color testing

color	rgb	cmyk	hsb	HTML	gray
olive	0.5 0.5 0	0 0 1 0.5	0.16667 1 0.5	808000	0.39
red!50!green	0.5 0.5 0	0 0 0.5 0.5	0.16667 1 0.5	808000	0.445
-cyan!50!magenta	0.5 0.5 0	0 0 0.5 0.5	0.16667 1 0.5	808000	0.445
[cmyk]0,0,1,0.5	0.5 0.5 0	0 0 1 0.5	0.16667 1 0.5	808000	0.39
[cmyk]0,0,.5,.5	0.5 0.5 0	0 0 0.5 0.5	0.16667 1 0.5	808000	0.445
[rgb:cmyk]0,0,.5,.5	0.5 0.5 0	0 0 0.5 0.5	0.16667 1 0.5	808000	0.445

Color spectrum



TEST `\color[wave]{380}`

TEST `\color[wave]{780}`

Tables

```
\rowcolors[\hline]{3}{green!25}{yellow!50}
\arrayrulecolor{red!75!gray}
\begin{tabular}{ll}
test & row \number\rownum\\
test & row \number\rownum\\
test & row \number\rownum\\
test & row \number\rownum\\
\arrayrulecolor{black}
test & row \number\rownum\\
test & row \number\rownum\\
\rowcolor{blue!25}
test & row \number\rownum\\
test & row \number\rownum\\
\hiderowcolors
test & row \number\rownum\\
test & row \number\rownum\\
\showrowcolors
test & row \number\rownum\\
test & row \number\rownum\\
\end{tabular}
```

test	row 1
test	row 2
test	row 3
test	row 4
test	row 5
test	row 6
test	row 7
test	row 8
test	row 9
test	row 10
test	row 11
test	row 12

Famous Composers

```
\rowcolors[]{1}{white!5}{lightgray}
% this indicates the change in odd and pair rows
\arrayrulecolor{black}
\begin{tabular}{|l|c|}
\hline
J.\ S.\ Bach      &  1685--1750   \\
W.\ A.\ Mozart    &  1756--1791   \\
L.\ Beethoven     &  1770--1827   \\
F.\ Chopin        &  1810--1849   \\
R.\ Schumann      &  1810--1856   \\
B.\ Bartok        &  1881--1945   \\
\hline
\end{tabular}
```

J. S. Bach	1685–1750
W. A. Mozart	1756–1791
L. Beethoven	1770–1827
F. Chopin	1810–1849
R. Schumann	1810–1856
B. Bartok	1881–1945

Colred boxes

test `\fcolorbox{gray}{yellow}{test}`

test `\fcolorbox[cmyk]{0,0,0,0.5}{0,0,1,0}{test}`

test `\fcolorbox[gray]{0.5}[wave]{580}{test},`

test `\fcolorbox{gray}[wave]{580}{test}`

Colred boxes

test `\fcolorbox{gray}{yellow}{test}`

test `\fcolorbox[cmyk]{0,0,0,0.5}{0,0,1,0}{test}`

test `\fcolorbox[gray]{0.5}[wave]{580}{test},`

test `\fcolorbox{gray}[wave]{580}{test}`

For more color names see page 38 of xcolor.pdf

or

Click here

Hypertext marks in LaTeX

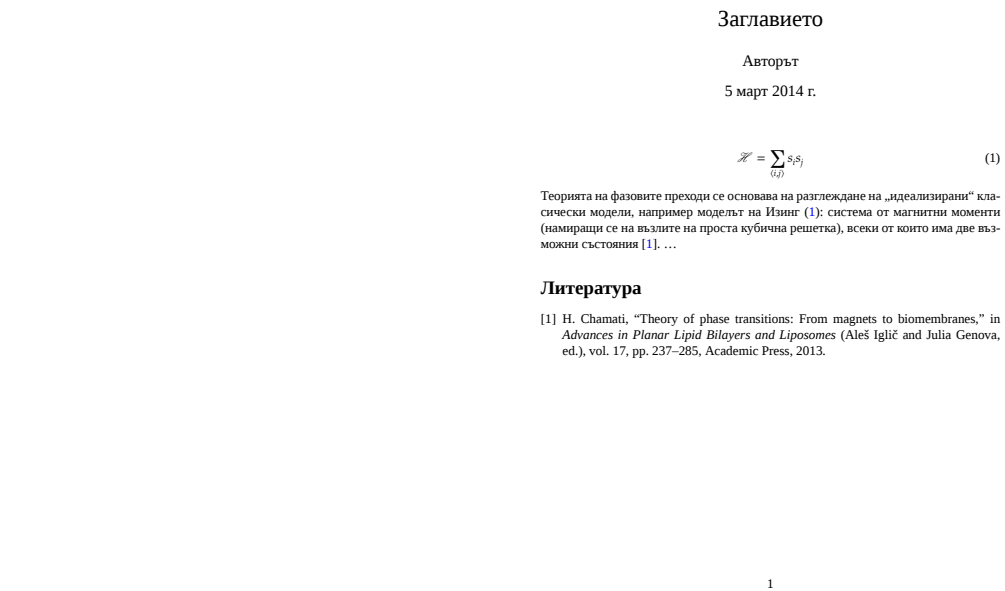
```
\usepackage[dvipsnames]{xcolor}
\usepackage[dvips,%
   pdftitle={My thesis},%
   pdfauthor={H. Chamati},%
   pdfsubject={Statistical Mechanics, Materials Science},%
   pdfkeywords={Phase transitions, critical phenomena},%
   pdfcreator={Latex with hyperref package},%
   pdfstartview=FitH,%
   bookmarks=true,%
   bookmarksopen=true,%
   breaklinks=true,%
   pdfcenterwindow=true,%
   pdfdisplaydoctitle=true,%
   unicode=true,%
   colorlinks=true,%
   linkcolor=blue,anchorcolor=blue,%
   citecolor=blue,filecolor=cyan,%
   menucolor=blue,%
   urlcolor=blue]{hyperref}
\usepackage[pageref]{backref}
```

Example

```
\href{article2.pdf}{\red Hyperref Example}
```

$\Downarrow$

Hyperref Example



Заглавието

Авторът

5 март 2014 г.

$$\mathscr{H} = \sum_{\langle i,j \rangle} s_i s_j \qquad (1)$$

Теорията на фазовите преходи се основава на разглеждане на „идеализирани“ класически модели, например моделът на Изинг (1): система от магнитни моменти (намиращи се на възлите на проста кубична решетка), всеки от които има две възможни състояния [1]. …

Литература

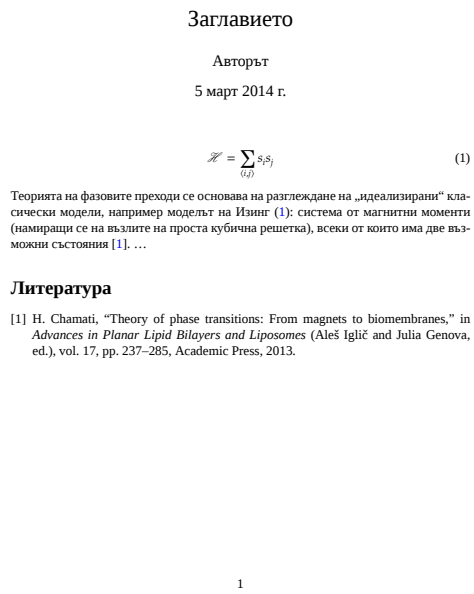
[1] H. Chamati, “Theory of phase transitions: From magnets to biomembranes,” in *Advances in Planar Lipid Bilayers and Liposomes* (Aleš Iglič and Julia Genova, ed.), vol. 17, pp. 237–285, Academic Press, 2013.

1

Example

```
\href{article2.pdf}{\red Hyperref Example}
```

Hyperref Example



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