

# The background package

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## Abstract

This package allows the placement of background material on the pages of a document. The user can control many aspects (i.e., contents, position, color, opacity) of the background material that will be displayed.

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## 1 Introduction

The background package relies on the TikZ and everypar packages to provide a simple and flexible mechanism to include background material on all (or on some of) the pages of a L<sup>A</sup>T<sub>E</sub>X<sub>2</sub>ε document.

The implementation is quite simple and parallels the one of the draftwatermark package by Sergio Callegari, but adds greater control over the background material attributes.

The author will gladly receive suggestions, comments and bug reports.

## 2 User Interface

Loading this package (without any package options) in the preamble of a document in the standard way:

```
\usepackage{background}
```

activates a set of predefined options that will typeset the word "Draft" across every page of your document (from the lower left corner to the upper right corner), using [this color](#) and a huge font size.

Of course, the package can be loaded using some of the options described in the next section; for example:

```
\usepackage[some,bottom]{background}
```

## 2.1 Package Options

By default, the package loads the options `all` and `center`.

Table 1 shows the available package options and their meaning. Obviously, the options `all` and `some` are mutually exclusive; the same remark applies to the group of options `center`, `bottom`, and `top`.

Take into account that using the `some` option will cause no background material to be displayed at all and the user will have to issue the command `\BgThispage` for each page in which he/she desires the background material to appear (see example 3).

Option	Meaning
<code>all</code>	The background material will be displayed in all the pages.
<code>some</code>	The background material will be displayed only in the pages for which the <code>\BgThispage</code> command was used.
<code>center</code>	The background material will be displayed diagonally.
<code>bottom</code>	The background material will be displayed horizontally at the bottom of the page.
<code>top</code>	The background material will be displayed horizontally at the top of the page.

Table 1: The package options.

## 2.2 User Commands

Since the commands used to modify attributes of the background material depend on the `\node` construct offered by the TikZ package, we strongly encourage the reading of Till Tantau's *PGF/TikZ package manual*.

`\SetBgContents` This command allows the user to change the material that will be used as background. The usage is

```
\SetBgContents{material}
```

where `material` can be any text or an image (via the `\includegraphics` command from the `graphicx` package) or even a graphic created, for example, with the TikZ package.

`\SetBgColor` This command allows the user to change the color that will be used for the background material if such material is text. The usage is

$$\backslash\text{SetBgContents}\{\langle color \rangle\}$$

where  $\langle color \rangle$  can be any color set by the `xcolor` package.

`\SetBgAngle` This command allows the user to change the angle that will be used for displaying the background material. The usage is

$$\backslash\text{SetBgContents}\{\langle degrees \rangle\}$$

where  $\langle degrees \rangle$  can be any value between  $-360$  and  $360$ .

`\SetBgOpacity` This command allows the user to change the transparency level for the background material. The usage is

$$\backslash\text{SetBgOpacity}\{\langle value \rangle\}$$

where  $\langle value \rangle$  can be any number between 0 (full transparency) and 1 (no transparency at all).

`\SetBgScale` This command allows the user to change the scaling factor that will be applied to the background material. The usage is

$$\backslash\text{SetBgScale}\{\langle factor \rangle\}$$

where  $\langle factor \rangle$  can be any positive value.

`\SetBgPosition` This command allows the user to define the position of the background material. The usage is

$$\backslash\text{SetBgPosition}\{\langle position \rangle\}$$

**Do not enclose  $\langle position \rangle$  inside parentheses** where  $\langle position \rangle$  can be any valid position accepted by the `at` syntax for nodes placement (see the `TikZ` manual). Some examples of valid positions are

$$\begin{aligned} &\backslash\text{SetBgPosition}\{0,0\} \\ &\backslash\text{SetBgPosition}\{\text{current page.north}\} \\ &\backslash\text{SetBgPosition}\{5\text{cm},7\text{cm}\} \end{aligned}$$

`\SetBgAnchor` This command allows the user to set the anchor for the node placement. The usage is

$$\backslash\text{SetBgAnchor}\{\langle anchor name \rangle\}$$

Typical examples are:

$$\begin{aligned} &\backslash\text{SetBgAnchor}\{\text{north east}\} \\ &\backslash\text{SetBgAnchor}\{\text{west}\} \end{aligned}$$

`\SetBgHshift` `\SetBgVshift` These two commands control the horizontal and vertical shifting of the node position.

$$\begin{aligned} &\backslash\text{SetBgHshift}\{\langle value \rangle\} \\ &\backslash\text{SetBgVshift}\{\langle value \rangle\} \end{aligned}$$

The following two commands are designed to give the user control on whether the background material should or should not appear on specific pages of the document.

`\BgThispage` This command permits to select particular pages in which the background material will be displayed (see example 3).

### 2.2.1 Experimental

`\NoBgThispage`  
Do not use this command  
in two column mode.

This command will prevent the background material to be displayed in the page where it was issued. Its implementation depends on the `afterpage` package, so the corresponding precautions must be taken into account (see example 5) .

## 3 Examples

In the following examples, the `lipsum` package was used only to automatically generate text.

*Example 1.* This example shows how to display the background material only on the first two pages of the document:

```
\documentclass{article}
\usepackage{background}
\usepackage{lipsum}

\begin{document}
\lipsum[1-10]
\newpage\SetBgContents{}
\lipsum[1-30]
\end{document}
```

*Example 2.* This example imitates the page numbering format used in this document:

```
\documentclass{article}
\usepackage[top]{background}
\usepackage{lipsum}

\SetBgContents{-\thepage-}
\SetBgAngle{0}
\SetBgColor{black!40}
\SetBgScale{4}
\SetBgHshift{60}
\SetBgVshift{-5}

\pagestyle{empty}

\begin{document}
\lipsum[1-30]
\end{document}
```

*Example 3.* This example illustrates how to use of the `\BgThispage` command to add background material on selected pages.

```
\documentclass{article}
\usepackage[some,top]{background}
\usepackage{lipsum}
```

```

\begin{document}
\lipsum[1-5]
\newpage
\SetBgContents{A}\SetBgColor{yellow}
\BgThispage
\lipsum[1-5]
\newpage
\SetBgContents{B}\SetBgColor{blue}
\BgThispage
\lipsum[1-5]
\end{document}

```

*Example 4.* This example shows how to proceed in order to obtain different background material for the odd and even pages of a document.

```

\documentclass{article}
\usepackage{background}
\usepackage{lipsum}
\usepackage{ifthen}

\SetBgContents{}
\SetBgOpacity{1}
\SetBgScale{1.5}
\makeatletter
\AddEverypageHook{%
  \ifthenelse{\isodd{\thepage}}{%
    \SetBgAngle{90}%
    \SetBgPosition{0,-.7\textheight}%
    \SetBgColor{blue!90}%
    \SetBgContents{The background package}}%
  \SetBgAngle{270}%
  \SetBgPosition{1.35\textwidth,-.7\textheight}%
  \SetBgContents{First version}}%
  \bg@material}
\makeatother

\begin{document}
\lipsum[1-30]
\end{document}

```

Adding the `twocolumn` class option will produce compilation errors

*Example 5.* This example illustrates the use of the `\NoBgThispage` command, to suppress the background material on selected pages (page 2, in this case).

```

\documentclass{article}
\usepackage{background}
\usepackage{lipsum}

\begin{document}
\lipsum[1-5]

```

```

\newpage\NoBgThispage
\lipsum[1-5]
\newpage
\lipsum[1-20]
\end{document}

```

## 4 Implementation

Standard identification:

```

1 \NeedsTeXFormat{LaTeX2e}
2 \ProvidesPackage{background}[2009/11/07 v1.0 bg material]

```

Now we load the packages that will be used:

```

3
4 \RequirePackage{everypage}
5 \RequirePackage{tikz}
6 \RequirePackage{afterpage}

```

`\bg@some` A boolean (initially set to *false*) to control whether the background material will be displayed in every page or not.

```

7
8 \newif\ifbg@some
9 \bg@somefalse

```

`\bg@contents` We define the internal control commands and set their default value:

```

\bg@color 10
\bg@angle 11 \def\bg@contents{Draft}
\bg@opacity 12 \def\bg@color{red!45}
\bg@scale 13 \def\bg@angle{60}
\bg@position 14 \def\bg@opacity{.5}
\bg@anchor 15 \def\bg@scale{15}
\bg@hshift 16 \def\bg@position{current page.center}
\bg@vshift 17 \def\bg@anchor{}
18 \def\bg@hshift{0}
19 \def\bg@vshift{0}

```

Now we declare the package options:

```

20
21 \DeclareOption{all}{\bg@somefalse}
22 \DeclareOption{some}{\bg@sometrue}
23 \DeclareOption{center}{%
24 \def\bg@position{current page.center}%
25 \def\bg@anchor{}%
26 \def\bg@angle{60}}
27 \DeclareOption{bottom}{%
28 \def\bg@position{current page.south}%
29 \def\bg@anchor{above}%
30 \def\bg@angle{0}%

```

```

31 \def\bg@scale{8}
32 \DeclareOption{top}{%
33 \def\bg@position{current page.north}%
34 \def\bg@anchor{below}%
35 \def\bg@angle{0}%
36 \def\bg@scale{8}}

```

We next execute and process options in the standard L<sup>A</sup>T<sub>E</sub>X2e way:

```

37
38 \ExecuteOptions{all,center}
39 \ProcessOptions

```

`\SetBgContents` Now comes the definition of the user commands:

```

\SetBgColor 40
\SetBgAngle 41 \newcommand*\SetBgContents[1]{%
\SetBgOpacity 42 \def\bg@contents{#1}}
\SetBgScale 43 \newcommand*\SetBgColor[1]{%
44 \def\bg@color{#1}}
\SetBgPosition 45 \newcommand*\SetBgAngle[1]{%
\SetBgAnchor 46 \def\bg@angle{#1}}
\SetBgHshift 47 \newcommand*\SetBgOpacity[1]{%
\SetBgVshift 48 \def\bg@opacity{#1}}
49 \newcommand*\SetBgScale[1]{%
50 \def\bg@scale{#1}}
51 \newcommand*\SetBgPosition[1]{%
52 \def\bg@position{#1}}
53 \newcommand*\SetBgAnchor[1]{%
54 \def\bg@anchor{#1}}
55 \newcommand*\SetBgHshift[1]{%
56 \def\bg@hshift{#1}}
57 \newcommand*\SetBgVshift[1]{%
58 \def\bg@vshift{#1}}

```

`\bg@material` Our main command uses a simple `\node` construct to build the background material.

```

59
60 \newcommand\bg@material{%
61 \begin{tikzpicture}[remember picture,overlay]
62 \node [rotate=\bg@angle,scale=\bg@scale,opacity=\bg@opacity,%
63 xshift=\bg@hshift,yshift=\bg@vshift,color=\bg@color]
64 at (\bg@position) [\bg@anchor] {\bg@contents};
65 \end{tikzpicture}}%

```

`\BgThispage` A simple application of the `AddThispageHook` command provided by the `everypage` package.

```

66 \newcommand\BgThispage{\AddThispageHook{\bg@material}}

```

`\NoBgThispage` A hack that perhaps admits improvements. We make a copy of `\bg@material`, and redefine it to be empty on the current page. Then we use the `afterpage` command to restore the original background material.

```

67
68 \newcommand\NoBgThispage{%
69   \let\oldbg@material\bg@material\renewcommand\bg@material{}%
70   \afterpage{\AddEverypageHook{\oldbg@material}}}

```

Finally, we check for the boolean `bg@some`; if it is `true`, then no background material is added; otherwise, the material will be added using the `AddEverypageHook` command.

```

71
72 \ifbg@some
73   \AddThispageHook{}
74 \else
75   \AddEverypageHook{\bg@material}
76 \fi

```

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Numbers written in *italic* refer to the page where the corresponding entry is described; numbers underlined refer to the code line of the definition; numbers in *roman* refer to the code lines where the entry is used.

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