The **tikzposter** class [*]

Pascal Richter, Richard Barnard

`tikzposter@mathcces.rwth-aachen.de`

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Abstract

This document class aims to provide a simple way of using TikZ for generating posters.

Contents

1 Introduction

The **tikzposter** document class file may be used to simplify formatting and generating scientific posters in the **.pdf** format. It uses the TikZ package to generate a poster layout. The poster is formed by a series of blocks against a background in a sequence of aligned columns. The purpose of the class is reduce the level of formatting by automatically setting spacing between blocks in the poster as well as their lengths. The user has control over the width of the columns. Due to the class' reliance on TikZ, only **.pdf** output is supported. This document explains the formatting options available and how to easily create a basic block layout.

In order to use the class, begin the document with

>   `\documentclass[`*options*`]{tikzposter}`

where the options are explained in Section **??**. After this, title matter may be declared and the color theme information entered (see Section **??**. Inside of the `document` environment, the title is created by the use of one of the title block commands (see Section **??**) and columns of aligned blocks are then created (see Section **??**).

Required packages: The class uses LATEX2e and the following required packages: `tikz`, `calc`, `ifthen`, `ae`, `xstring`, `etoolbox`, `xkeyval`.

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[*]This document corresponds to **tikzposter** v1.0, dated 2012/09/01.

2 Format options

There are several options available for customizing the general layout of the poster. These are called as optional arguments when declaring the document class. The options for the page geometry are

- font size: The size of the text in the main body may be set as : `12pt`, `14pt`, `17pt`, `20pt`, or `25pt`.

- paper size: Currently, paper sizes may be set to : `a0paper`, `a1paper`, or `a2paper`.

- orientation: Either `landscape` or `portrait`.

The following options are set in the form ⟨*variable name*⟩=⟨*value*⟩ and deal with spacing between blocks and between portions of the blocks:

- `margin`: The margin between outer edge of the poster and the edge of the paper.

- `inner margin`: The margin from the edge of the poster edge to the outermost edge of the blocks;

- `titleinnersep`: The spacing between the edge of the title block and the title and logos inside of the title block;

- `titletoblockverticalspace`: The spacing between the bottom edge of the title block and the top of columns of blocks below;

- `blocktitleinnersep`: The spacing between the edge of the blocks' title frames and the blocks' title text;

- `blocktitlewidthratio`: The relative width of the title in relation to the block body's width;

- `blocktitlemaxwidth`: The maximum width of the lines in a block's title;

- `blockbodyinnersep`: The inner margin for the contents of the blocks;

- `blockverticalspace`: The spacing between the bottom of a normal block and the top of the next block;

- `colspace`: The horizontal spacing between successive columns;

- `subcolspace`: The horizontal spacing between successive columns in the `subblock` environment (See Section **??** for more on this environment).

A sample usage of these options would be :

```
\documentclass[25pt, a0paper, portrait, margin=20mm, innermargin=15mm,
titleinnersep=8mm,titletoblockverticalspace=20mm,blocktitleinnersep=8mm,
blocktitlewidthratio=08, blocktitlemaxwidth=25cm ,blockbodyinnersep=8mm,
blockverticalspace=15mm,colspace=15mm, subcolspace=8mm]{tikzposter}
```

These listed values are in fact the default values of the optional arguments.

Additionally, the blocks' shape may be altered from the default rounded shape. This is set via the macros

- `settitlebodystyle{...}`: declaring the shape for the title block;

- `setblocktitlestyle{...}`: declaring the shape for the titles in blocks in the main matter;

- `setblockbodystyle{...}`: declaring the shape for the blocks in the main matter.

The inputs for these macros may be *rounded* (the default for each block), *rectangular*, *shaded*, or TikZ options, e.g.: `rounded corners=2pt`. The allowed options are those relevant for drawing a `rectangle` shape in TikZ. Note that any options regarding the color will be overwritten by the color theme (see below). Note that the style set for the title is only for the case where embedded titles are not used (See the next section for more on this). Additional styles may be created and inserted into the included file `tikzposter-layoutstyles.tex`. To turn off the comment on how the poster was created in the lower right corner, include in the preamble `\tikzposterlatexaffectionproofoff`.

3 Setting the title matter

`\titleblock` In the preamble, the standard fields *title, author* and *institute* may be defined. The title is then created by the command `\titleblock[`*options*`]`. Note: this replaces the need for using `\maketitle`. The vertical space needed by the block is determined automatically. Resuts of different configurations can be seen below in Figure **??**. The options are as follows and are all set via ⟨*variable name*⟩=⟨*value*⟩:

- `left fig`: the file name of an image file to be inserted on the left side of the title block

- `left fig height`: the height of the left image

- `right fig`: the corresponding file for the right side of the title block

- `right fig height`: right image's height

- `embedded`: set to either *true* or *false*. If true, the title block is a single white block up to the outer edge of the poster (i.e. up to the edge of the paper minus the margin defined above in the format section. If false, the title block is a rounded block, set off of the poster edge by the defined inner margin. The default is set to *false*.

- `separated`: also set to either *true* or *false*. If true, the title matter (title, author, institute) is placed **below** the title block. If false, it is centered **within** the title matter. The default is set to *false*.

Please note that if figures are used, and the `separated` is set to *false*, the title matter will be placed centered in the remaining empty space. A sample creation of the title block would be:

```
\titleblock[left fig=logoL.png, right fig=logoR.png, left fig height=7cm,
right fig height=7cm, embedded, separated=false]
```

4   Creating blocks

\block   The poster is composed of blocks with or without titles. Blocks are created with the command `\block[`*options*`]{`*title*`}{`*text*`}`. Excluding options, this creates a block of the width of the width of the page, excepting the margin and inner margin. A title for the block will be generated along the top in a separate, smaller block, centered using the contents of *title*. The width of the block may optionally be set (i.e. `width=0.75\textwidth`); else it will be set to be the `\textwidth`; alternatively, it may be set with an absolute width (i.e. `width=8cm`). If the *title* field is left empty, then there will be no title for the block created. Multiline titles are supported and will be (approximately) broken to satisfy the maximum width of the block titles as specified in the formatting options described above. Additionally, the block's title may be aligned via one of following inputs: `l,c,r` which sets the title as aligned (subject to the specified spacing rules) as left, centered, and right justification, respectively; without specifying the alignment, the title will be centered. The contents of *text* will be displayed in the main body of the block. The length of the block is determined automatically by the contents of *text*. Further blocks may be generated in the same column by further uses of `\block`. However, if the contents of the blocks in a single column lead to spill over (that is, they take up more vertical space than allowed under the formatting for the paper size and margins), then formatting errors will occur.

columns   If multicolumn formats are desired, the environment `columns` may be used. All blocks generated inside of this environment will be divided into the desired columns with the specified width. This can be To begin a column, use the command `\column{width}`. Any blocks created after this will be aligned along a vertical line automatically placed, depending on the number of columns and their widths, as specified inside of the instance of the environment. single column of the width given relative to the width of the paper declared in the options for `\documentclass` (excepting the margin and inner margin). Formatting errors may arise if the sum of the column widths is greater than 1. Alternatively, the width may also be set absolutely (i.e. `width=20cm`).The width of the column may be referred—for formatting pictures or altering a block's width, for instance—by referencing the length `\colwidth`.

subcolumns   If you wish to create a set of subcolumns in the current column, the environment `subcolumns` can be used. In this environment, subcolumns are created by `\subcolumn{`*width*`}` and blocks are created by `\block{`*title*`}{`*text*`}`. However, the width in the `\subcolumn` command is relative now to the current `\colwidth` and

Title Matter

(a) No logos; not separated, not embedded

Title Matter

(b) No logos; not separated, embedded

Logo1   Title Matter

(c) Left logo; not separated, not embedded

Logo1   Title Matter

(d) Right logo; not separated, embedded

Logo1

Title Matter

(e) Right logo; separated, not embedded

Logo1

Title Matter

(f) Right logo; separated, embedded

Logo1   Logo2

Title Matter

(g) Two logos; separated, not embedded

Logo1   Logo2
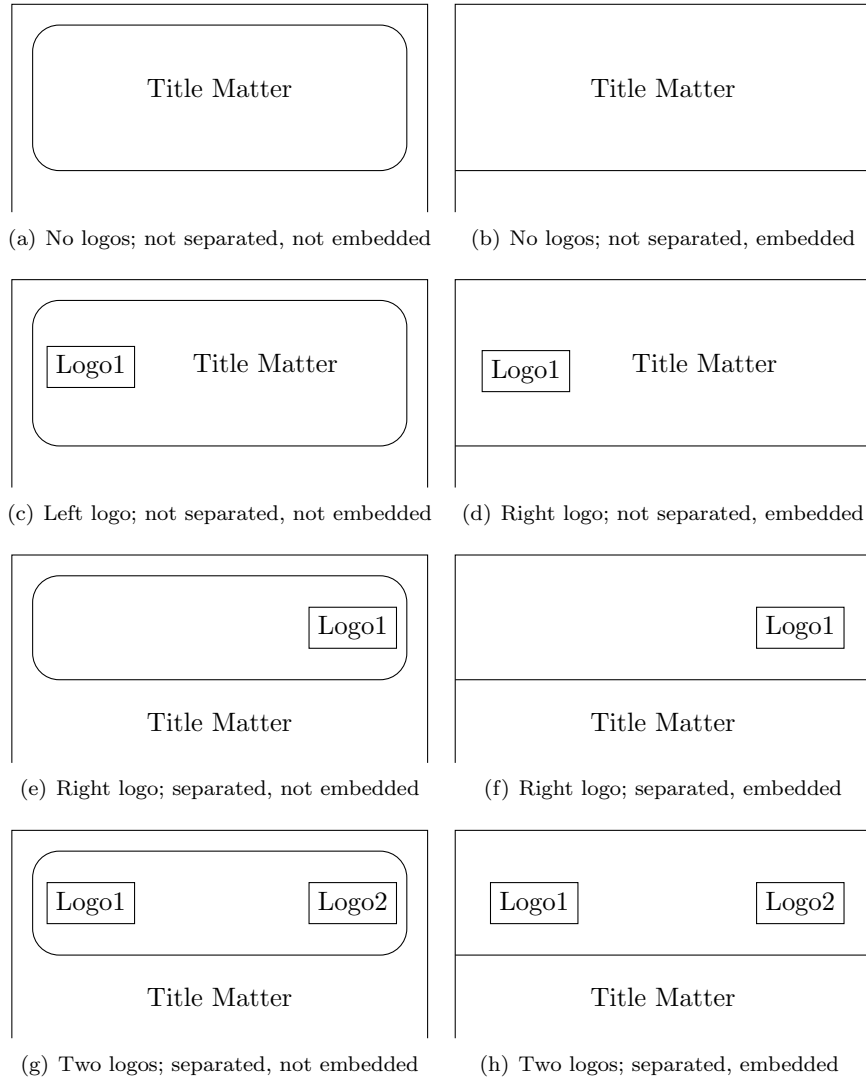
Title Matter

(h) Two logos; separated, embedded

Figure 1: Use of different title formats (not to scale)

can be referenced by the length `\subcolwidth`. The same comments on formatting made above regarding widths and text length hold here as well.

\bottomblock   A long block spanning the entirety of the page (excepting margins) at the bottom of the page can be generated by the command `\bottomblock{`*title*`}{`*text*`}`. The text will be justified in the same manner as for standard blocks, and text length comments above still hold. The title is created in the same manner as above.

Due to current implementation of the blocks, the `figure` environment is not possible. Images may be included by the use of `\includegraphics` and captions are possible by the use of other packages, such at `\caption`. Currently this produces some warnings which shall be addressed in future releases.

5   Setting the color theme

In the preamble, the color theme may be set via `\usecolortheme{`*theme*`}`. If no theme is chosen, a default color theme with gray background and blue block titles
\usecolortheme   is used. The *theme* input may be on the following preset themes: `default`, `anil`, `armin`, `edgar`, `emre`, `hanna`, `james`, `kai`, `lena`, `manuel`, `martin`, `max`, `nicolas`, `pascal`, `peter`, `philipp`, `richard`, `roman`, `stefanie`, `vinay` (named for MathC-CES institute members, several of whom helped create the themes). Alternatively, you may use your own theme. In this case, the input *theme* is the name of the .tex file (without extension) where this has been created. The referenced file should be simply a sequence of `\definecolor` calls where the colors described below are defined. Alternatively, the new theme may be insert into the included file `tikzposter-colorthemes.tex`. The remainder of this section is dedicated to the required elements in a theme. We note that if a color in the theme is undefined, default colors will be used. Finally, if one wishes, one may define in the document file the colors locally in the preamble. This is done via the standard `\definecolor` command and should reference colors named below.

background colors   The three colors at top, bottom and in the middle, `backgroundcolortop`, `backgroundcolomiddle`, and `backgroundcolorbottom` are used by the class to create a graded backround behind the blocks (title and regular blocks). The background is graded vertically between the three with `backgroundcolormiddle` at the center of the page.

Separate colors are defined for the background of the title block. The colors `titlebgcolortop` and `titlebgcolorbottom` define colors for a vertically graded fill of the title block (when not using on of the embedded title settings). If using one of the embedded title blocks, the vertical graded background is defined with `embeddedtitlebgcolortop` and `embeddedtitlebgcolorbottom`. One should note that if using one of the embedded title formats where the title information is placed *under* the block with logo, that the title will be placed against the *background* colors defined above and *not* the colors defined for the title block.

block colors   The colors for the backgrounds of the blocks can also be defined. These define the relevant colors for all blocks, excluding the title. The color of the frames of the blocks (as well as the title block and the separating line of the embedded title)

may be set `framecolor`. The background color of the title portion of the block may be set with `blocktitlebgcolor` and the background color of the portion of the block with the text is set by `blockbodybgcolor`.

The relevant text colors may also be individually defined. The color of the text of the title matter is defined via `titlefgcolor`. The color of the title text in each block is defined by `blocktitlefgcolor` and the color of the text of the main portion of the block is defined by `blockbodyfgcolor`. The contents of a sample `colortheme.tex` are included below.

```
% Background Colors
\definecolor{backgroundcolortop}{HTML}{BCD2EE}
\definecolor{backgroundcolormiddle}{HTML}{CAE1FF}
\definecolor{backgroundcolorbottom}{HTML}{BCD2EE}
\definecolor{framecolor}{named}{white}

% Title Colors
\definecolor{titlebgcolortop}{HTML}{FFE7BA}
\definecolor{titlebgcolorbottom}{named}{white}
\definecolor{embeddedtitlebgcolortop}{named}{white}
\definecolor{embeddedtitlebgcolorbottom}{named}{white}
\definecolor{titlefgcolor}{named}{black}

% Block Colors
\definecolor{blocktitlebgcolor}{HTML}{FFE7BA}
\definecolor{blockbodybgcolor}{named}{white}
\definecolor{blocktitlefgcolor}{named}{black}
\definecolor{blockbodyfgcolor}{named}{black}
```

6 Poster template

The following LaTeX document is intended to be used as a template. It has a minimal set of inputs. Included with the package is an additional `tikzposter-example.tex` which has more extensive comments additional options implemented, see Section **??**.

```
1 ⟨∗tikzposter − template.tex⟩

2 \documentclass{tikzposter}
3 \tikzposterlatexaffectionproofoff
4 % Title, Author, Institute
5 \title{Template Poster}
6 \author{Author(s)}
7 \institute{Institute}
8
9 % Begin document
10 \begin{document}
11
12 % Title block
13 \titleblock[left fig=logoL.png, left fig height=7cm, embedded=true, separated=false]
```

```
14 \block{Sample Block}{Test}
15  \begin{columns}
16  % Set first column
17 \column{0.52}
18
19  % First column - first block
20 \block{Sample Block}{Test\\Test\\Test}
21
22  % First column - second block
23 \block{Sample Block}{Test\\Test}
24
25  % First column - third block
26 \block{Sample Block}{
27 T\\E\\S\\T
28 }
29
30  % Set second column
31 \column{0.48}
32
33  % Second column - first block
34 \block[l]{Sample Block}{Test}
35
36  % Second column - second block
37 \block[c,width=0.85\colwidth]{Variable width}{
38 Block with smaller width.
39 }
40
41  % Second column - third block
42 \block{}{
43     Block with no title
44 }
45
46  % Second column - subblocks
47 \begin{subcolumns}
48     \subcolumn{0.3} \block[r]{1}{First block.} \block{2}{Second block}
49     \subcolumn{0.5} \block{Subblocks}{Sample subblocks}
50     \subcolumn{0.2} \block{4}{Fourth}
51
52 \end{subcolumns}
53
54  % Bottomblock
55 \block{Bottomblock}{
56     Sample block.
57 }
58 \end{columns}
59 \block[r]{Final Block}{Test}
60 \end{document}

61 ⟨/tikzposter − template.tex⟩
```

7 Poster example

Attached is an example tex file `tikzposter-example.tex`.

8 For further development

As described above, additional color schemes may be included in the file `tikzposter-colorthemes.tex`. Additionally, new styles of the relevant blocks may be created using the appropriate (i.e. for rectangles) TikZ options in the file `tikzposter-layoutstyles.tex`. Finally, several possible changes may be possible in the future. These include:

- Alternative shapes for title blocks/body blocks/ block titles. Such changes would require improving the alignment/spacing rules between blocks.

- Possible different title formats other embedded and the current not embedded styles.