

beamerswitch — Convenient mode selection in Beamer documents

Alex Ball

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This class is a wrapper around the `beamer` class to make it easier to use the same document to generate the different forms of the presentation: the slides themselves, an abbreviated slide set for transparencies or online reference, an n-up handout version, and a transcript or set of notes using the `article` class.

To contact the author about this package, please visit the GitHub page where the code is hosted: <https://github.com/alex-ball/beamerswitch>.

1 Quick start guide

Here are the key facts:

- The `beamerswitch` class makes it easier to switch between `beamer` modes.
- It is aimed at you if you want to generate handouts from your presentation, whether printouts of your slides or something more like a paper or article.
- It is *not* a drop-in replacement for `beamer`.

If you have an existing `beamer` presentation and want convert it to use `beamerswitch` instead, here's what you need to do.

1. Have you specified class options other than `ignorenonframetext`? If so, start by rewriting your `\documentclass` line in terms of `\PassOptionsToClass` – note that the optional argument (in square brackets) becomes mandatory (in curly braces):

| Before | After |
|---|--|
| <code>\documentclass[10pt]{beamer}</code> | <code>\PassOptionsToClass{10pt}{beamer}</code> |

Then add `\documentclass{beamerswitch}` directly below.

Otherwise, simply replace your `\documentclass` line with the `beamerswitch` one.

2. If you did *not* specify `ignorenonframetext` as one of your `beamer` options, add a `\mode<all>` line directly after `\begin{document}`.

3. Wrap any preamble content intended only for your slides (like `\usetheme` or `\usepackage` commands) with `'\mode<presentation>{...}'` or something more specific, as required.

In summary, here is an example:

| Before | After |
|---|---|
| <pre>\documentclass[10pt]{beamer} \usetheme{metropolis} \title{Test presentation} \begin{document} \maketitle \end{document}</pre> | <pre>\PassOptionsToClass{10pt}{beamer} \documentclass{beamerswitch} \mode<presentation>{% \usetheme{metropolis} } \title{Test presentation} \begin{document} \mode<all> \maketitle \end{document}</pre> |

At this point the document should compile exactly as before.

If you intend to use article mode at all, I strongly suggest that you proceed by converting your document body so it that works without the `'\mode<all>'` line. That means making sure all slide content is in a `frame` environment, new command definitions are moved to the preamble, and so on.

Lastly, read through the rest of this manual and see what `beamerswitch` can do for you!

2 Introduction

With `beamer`, it is possible to typeset the same document code in different ways to get different effects. The result you get depends on a potentially confusing mix of options, modes, and indeed classes.

Beamer has five modes for typesetting content. There are three modes that produce regular slides:

- The `beamer` mode relates to the normal, default slide set.
- The `trans` class option switches to the mode of the same name. It is intended for transparencies, but is really just an alternative mode that ignores 'bare' overlay specifications.
- The `handout` class option switches to the mode of the same name. It is intended for print-friendly versions, but is really just another alternative mode that ignores 'bare' overlay specifications.

The `beamer` manual shows how to use `handout` mode in conjunction with `pgfpages` to get several slides on a single side of A4 (or Letter) paper.

Beamer can also produce a double-height or double-width slide set, with the intention that each half will be shown on a different display (e.g. one for the audience, one for the speaker). There are three variations of this, activated using `\setbeameroption`:

- `show notes on second screen` uses the second screen for text marked up using `\note{<text>}`.
- `second mode text on second screen` uses the second screen for showing the slide typeset in `second` mode rather than `beamer`. Unlike `trans` and `handout`, `second` responds to ‘bare’ overlay specifications.
- `previous slide on second screen`, uses the second screen either for showing the previous slide or, if the slide has the `typeset second` option set, for showing the current slide typeset in `second` mode.

The final variation is to use a different class altogether, such as `article`, in conjunction with `beamerarticle`. In this case the content is set free-flowing in `article` mode, without any of the frame furniture.

The `beamer` manual suggests coping with all these variations by having the document code in one file, and using it as input to other files that each set up a different mode of operation. This is fine but a bit of a fiddle. It would be nice to be able to get the same effect using a single file and, ideally, a single command invocation.

The `beamerswitch` class addresses this issue by acting as a wrapper around the various options, and providing a common interface for switching between modes. More specifically, it has three main functions:

1. To provide more choice of handout-mode layouts than `pgfpages` gives you out-of-the-box. Additionally, I hope you will find the method for selecting them more memorable.
2. To enable you to switch to `article` mode with a simple change of class option, instead of having to fiddle with commented-out `\documentclass` and `\usepackage` lines.
3. To allow you to override the `beamer` mode from the command line, by choosing a given jobname suffix. Primarily this is to allow you to generate the different versions programmatically. Indeed, the class provides facilities for generating multiple versions with a single command.

3 Dependencies

To use `beamerswitch`, you will need to have the following packages available and reasonably up to date on your system. All of these ship with recent \TeX distributions.

- `beamer`
- `etoolbox`
- `hyperref`
- `iftex`
- `pgf`
- `shellessc`
- `xkeyval`
- `xstring`

One feature of the class uses `latexmk` by default, though you can configure it to use something else if you need or want to.

4 Loading the class

The class is loaded in the usual way:

```
\documentclass[options]{beamerswitch}
```

The various options are described below.

4.1 Choosing the mode of the current run

The `beamerswitch` class, as explained above, does not do much itself but rather helps you to switch between `beamer` modes, specifically `article`, `beamer`, `trans` and `handout`. Note that it loads `beamer` with the `ignorenonframetext` option, so that text outside frames is only shown in `article` mode.

The normal way of choosing the mode is to use the respective class options.

article (no value, initially unset)

Switches to `article` mode, which uses the `article` class and resembles a normal article.

beamer (no value, initially set)

Switches to `beamer` mode, which uses the `beamer` class and resembles a normal slideshow.

handout (no value, initially unset)

Switches to `handout` mode, which uses the `beamer` class but uses a different series of overlay specifications. It resembles a set of printed pages with multiple slides shown on each page.

trans (no value, initially unset)

Switches to `trans` mode, which uses the `beamer` class and resembles a normal slideshow, but uses a different series of overlay specifications.

There is, however, a sneaky second way of setting the mode that overrides the first, and that is to use the `\jobname`. By default, this is the name of your `TEX` file minus the `.tex` extension, but you can set it to something else when you run `TEX`. If you set the `\jobname` to end in one of the following suffixes, the mode will automatically switch:

- `-article` will switch to `article` mode.
- `-handout` will switch to `handout` mode.
- `-slides` will switch to `beamer` mode.
- `-trans` will switch to `trans` mode.

The idea is that you can keep your source document the same, but by running `TEX` with an alternative `\jobname`, you can get a different version out with a meaningfully different file name.

Of course, you may not want to use those suffixes. Perhaps you want them in German; perhaps your document's file name already ends in one of them; perhaps 'article' or 'trans' doesn't describe what you're using those modes for. The suffixes are provided by the following commands:

\ArticleSuffix

Holds the `\jobname` suffix that triggers `article` mode.

\BeamerSuffix

Holds the `\jobname` suffix that triggers `beamer` mode.

\HandoutSuffix

Holds the `\jobname` suffix that triggers `handout` mode.

\TransSuffix

Holds the `\jobname` suffix that triggers `trans` mode.

The CamelCase is an admittedly rather obscure signal to you that, if you want to change them to something else, you should do so via `\newcommand` before loading the class:

```
\newcommand*\ArticleSuffix{-script}
\documentclass{beamerswitch}
```

4.2 Using more than one mode at once

Another handy feature of the class is that it can spawn parallel compilations, so you could in theory generate all four versions from a single command. It achieves this magic by escaping to the shell and running `latexmk`. Thus for it to work you need to run `TeX` with shell escape enabled and you need `latexmk` to be installed.

alsoarticle (no value, initially unset)

Spawns a new compilation process in `article` mode.

alsobeamer (no value, initially unset)

Spawns a new compilation process in `beamer` mode.

alsohandout (no value, initially unset)

Spawns a new compilation process in `handout` mode.

alsotrans (no value, initially unset)

Spawns a new compilation process in `trans` mode.

also= \langle *comma-separated list of modes* \rangle (no default, initially empty)

Spawns compilation processes in each of the specified modes. Note that the list has to be wrapped in braces, and only the four aforementioned modes are recognized.

If you would rather use a tool other than `latexmk` to managed your spawned compilation processes, it is possible to do that. Bear in mind, though, that `beamerswitch` is not clever enough to spot if you have already compiled the other version on a previous run so you have to take care of that yourself. The command that does the business is this:

\BeamerswitchSpawn \langle *suffix* \rangle

Spawns a new compilation process with \langle *suffix* \rangle appended to the `\jobname`.

By default, `\BeamerswitchSpawn` checks which `TeX` engine you are running, and then runs the matching one of `\SpawnedPDFTeX`, `\SpawnedXeTeX`, `\SpawnedLuaTeX`, or if all the tests fail, `\SpawnedTeX`, with the converted `\jobname`. These commands all add an engine-selecting option to a base command, `\SpawnedCompiler`, which by default is

latexmk with synctex enabled, shell escape disabled and interaction set to batch mode. See the [Implementation](#) section below for details.

Any of these commands can be pre-defined to something else, depending on what you want to do. So, for example, if you want to change the base latexmk options, pre-define `\SpawnedCompiler` to latexmk plus your chosen options:

```
\newcommand*\SpawnedCompiler{%
  latexmk -silent -shell-escape -interaction=nonstopmode}
\documentclass{beamer-switch}
```

If you want to switch to using rubber, say, pre-define `\SpawnedPDFTeX` and friends accordingly (perhaps taking advantage of `\SpawnedCompiler` to reduce repetition):

```
\newcommand*\SpawnedCompiler{rubber -q --synctex}
\newcommand*\SpawnedPDFTeX{\SpawnedCompiler -m pdftex}
\newcommand*\SpawnedXeTeX{\SpawnedCompiler -m xelatex}
\documentclass{beamer-switch}
```

If you don't need the engine selection routine provided, simply pre-define `\BeamerSwitchSpawn` to do whatever you need it to do:

```
\newcommand*\BeamerSwitchSpawn[1]{%
  \ShellEscape{... -jobname=\jobname#1 \jobname}%
}
\documentclass{beamer-switch}
```

If you want to use arara to compile everything, the class options won't help you as arara does not let you change `\jobnames` on the command line. That's no problem, though, because you can do it manually within your list of directives:

```
% arara: lualatex
% arara: lualatex: { options: "-jobname beamer-switch-example-article" }
% arara: lualatex: { options: "-jobname beamer-switch-example-handout" }
% arara: lualatex: { options: "-jobname beamer-switch-example-trans" }
\documentclass{beamer-switch}
```

4.3 Improving compatibility

nohyperref

(no value, initially unset)

The beamer class loads `hyperref` for you, but when you switch to `article` mode, `beamerarticle` doesn't, so it is easy for you to get caught out. To protect you from this, `beamer-switch` does load `hyperref` in `article` mode, with the pleasing side effect that `\subject` and `\keywords` then work as intended instead of throwing errors.

To achieve this, the class has to load `hyperref` quite early on, which can cause trouble with certain other packages. If you would rather load `hyperref` yourself at a different point, use this option.

textinst (no value, initially unset)

In all modes, patches the `\inst` command so that it prints its argument using `\textsuperscript` instead of a mathematical superscript. This helps avoid unnecessary font changes.

5 Setting the layout of the handouts

The class provides a simplified interface to the `pgfpages` package. By default, it prints six slides to a side of A4 paper, but you can change this by using the following command in the preamble.

`\handoutlayout`{*options*}

Configures the layout of the page when using `handout` mode. It has no effect in other modes. The available *options* are listed below.

paper=*paper size* (no default, initially `a4paper`)

Selects the size of paper to use for `handout` mode. The value is passed directly to `pgfpages`, so consult the documentation of that package for the allowed values. You can find them under the documentation for the `resize to` layout.

nup=`1`|`1plus`|`2`|`3`|`3plus`|`4`|`4plus`|`6`|`8` (no default, initially `6`)

Selects how many slides are shown on a single page in `handout` mode. The ‘plus’ layouts leave blank space for recipients to make handwritten notes next to each slide. The effects of the various values are shown in Figure 1 on page 8. Note that the `2`, `3plus`, `4` and `6` layouts are intended for slides in the usual 4:3 aspect ratio, while the `3`, `4plus` and `8` layouts are intended for widescreen slides.

pnos (no value, initially unset)

Adds page numbers to the bottom of each page. The number appears at a distance of `\handoutpnobaseline` (initially 5mm) from the bottom edge of the page. You can change this before calling `\handoutlayout`, if you like, using the usual mechanisms (e.g. `\setlength`).

border=*length* (default 0.4pt, initially 0pt)

Puts a rectangular border of thickness *length* around each slide.

margin=*length* (default 0pt, initially 5mm)

Sets how much extra space to leave around each slide on the page. To achieve this it uses the `border shrink` option from `pgfpages`. If you add page numbers, this value will increase if necessary to prevent the number colliding with the slides, so treat it as a minimum.

align (no value, initially unset)

When `margin` is non-zero, the effective page margins are approximately half the size of the gaps between slides (some additional white space comes from preserving the aspect ratio of the slides). When set, this option tweaks the positions of the slides so that the page margins are approximately the same as the interior gaps.

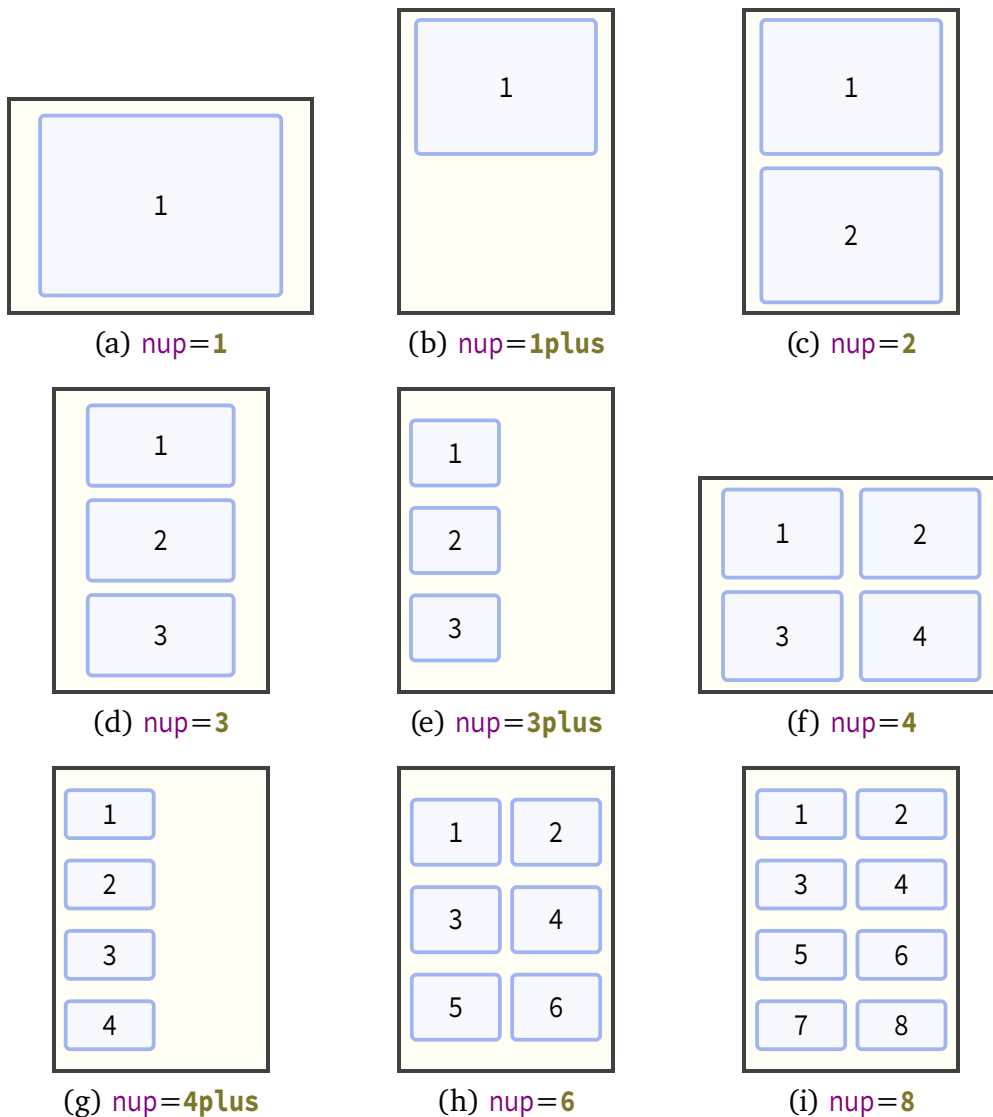


Figure 1: Handout layouts provided by `beamerswitch`

6 Changing the look of article mode

Some additional options can be set by using the following command in the preamble.

`\articlelayout`{*options*}

Configures the appearance of `article` mode. It has no effect in other modes. The available *options* are listed below.

`frametitles`=`para`|`margin`|`none` (no default, initially `para`)

In `article` mode, affects how frame titles are printed. By default, `beamerarticle` prints them as paragraph headings, represented by the value `para`. To have them printed in the margin (using `\marginpar`), use `margin`. To omit them altogether, use the value `none`.

`maketitle` (no value, initially unset)

In `article` mode, adjusts the `\maketitle` routine:

- The title is printed closer to the top margin.

- The subtitle is shown joined to the title using a colon (rather than on a new line).
- The institute is shown directly beneath the author name, similar to the `beamer` layout, so you can use `\inst` just as in `beamer` to tie authors to their affiliations.

If you have `xparse` (and hence `expl3`) installed, the class will detect cases where your title ends in a character like ‘?’ and will not add a colon to it in that case. You can also suppress the colon manually with the following code (add it *after* using `\title` if automatic detection is in effect):

```
\toggletrue{titlepunct}
```

7 Tips for further configuration

There are some other ways to customize the behaviour of the various modes.

You can use the standard \TeX methods for customizing how the `article` and `beamer` classes are loaded:

```
\PassOptionsToClass{a4paper,11pt}{article} % for article mode
\PassOptionsToClass{utf8}{beamer} % for beamer, handout, trans modes
\documentclass{beamerswitch}
```

And of course there is the standard `beamer` way of passing different options to different modes:

```
\documentclass{beamerswitch}
\mode<article>{
  \usepackage[utf8]{inputenc}
}
\mode<beamer>{
  \setbeameroption{second mode text on second screen}
}
```

8 Feedback

I hope you find this class useful. Please report any bugs and add any suggestions for improvements or new features to the [Issue Tracker](#) on GitHub.

9 Implementation

9.1 Dependencies

We use the following packages:

- xkeyval with xkvltxp for setting options
- etoolbox for command patches and list processing
- xstring for comparisons
- shellsc for running parallel compilations
- iftex for determining which engine to use

```
19 \RequirePackage{xkeyval,xkvltxp,etoolbox,xstring,shellsc,iftex}
```

9.2 Class options

We recognize four main modes of operation: ‘beamer’, ‘trans’, ‘handout’, and ‘article’.

The **beamer** option triggers beamer mode.

```
20 \define@boolkey[DC]{beamerswitch}{beamer}[true]{%  
21   \ifbool{DC@beamerswitch@beamer}{%  
22     \setkeys[DC]{beamerswitch}{trans=false}  
23     \setkeys[DC]{beamerswitch}{handout=false}  
24     \setkeys[DC]{beamerswitch}{article=false}  
25   }{}%  
26 }
```

The **trans** option triggers trans mode.

```
27 \define@boolkey[DC]{beamerswitch}{trans}[true]{%  
28   \ifbool{DC@beamerswitch@trans}{%  
29     \setkeys[DC]{beamerswitch}{beamer=false}  
30     \setkeys[DC]{beamerswitch}{handout=false}  
31     \setkeys[DC]{beamerswitch}{article=false}  
32   }{}%  
33 }
```

The **handout** option triggers handout mode.

```
34 \define@boolkey[DC]{beamerswitch}{handout}[true]{%  
35   \ifbool{DC@beamerswitch@handout}{%  
36     \setkeys[DC]{beamerswitch}{beamer=false}  
37     \setkeys[DC]{beamerswitch}{trans=false}  
38     \setkeys[DC]{beamerswitch}{article=false}  
39   }{}%  
40 }
```

The **article** option triggers article mode.

```

41 \define@boolkey[DC]{beamer-switch}{article}[true]{%
42   \ifbool{DC@beamer-switch@article}{%
43     \setkeys[DC]{beamer-switch}{beamer=false}
44     \setkeys[DC]{beamer-switch}{trans=false}
45     \setkeys[DC]{beamer-switch}{handout=false}
46   }{}%
47 }

```

The `also` option allows the user to specify a set of alternative modes to typeset in parallel, in a comma-separated list. Alternatively, the user can specify the Boolean `also*` options directly.

```

48 \define@boolkey[DC]{beamer-switch}{also-beamer}[true]{}
49 \define@boolkey[DC]{beamer-switch}{also-trans}[true]{}
50 \define@boolkey[DC]{beamer-switch}{also-handout}[true]{}
51 \define@boolkey[DC]{beamer-switch}{also-article}[true]{}
52 \newcommand{\beamer-switch@SetAlso}[1]{%
53   \key@ifundefined[DC]{beamer-switch}{also#1}{%
54     \ClassWarning{beamer-switch}{`#1' is not a valid value for option `also'}%
55   }{}%
56   \setkeys[DC]{beamer-switch}{also#1}%
57 }%
58 }
59 \define@key[DC]{beamer-switch}{also}{%
60   \forcsvlist{\beamer-switch@SetAlso}{#1}%
61 }

```

The `nohyperref` option stops the class from loading the `hyperref` package in article mode.

```

62 \define@boolkey[DC]{beamer-switch}{nohyperref}[true]{}

```

The `textinst` option adjusts the superscript used for institution markers.

```

63 \define@boolkey[DC]{beamer-switch}{textinst}[true]{}

```

The default behaviour is to use beamer mode only.

```

64 \setkeys[DC]{beamer-switch}{beamer=true,also-beamer=false,also-trans=false,%
65   also-handout=false,also-article=false}

```

Now we process the options given by the user.

```

66 \ProcessOptionsX[DC]<beamer-switch>

```

9.3 Jobname-based mode switching

We define some default values for the special suffixes.

```

67 \providecommand*\BeamerSuffix{-slides}
68 \providecommand*\TransSuffix{-trans}
69 \providecommand*\HandoutSuffix{-handout}

```

```
70 \providecommand*\ArticleSuffix{-article}
```

We provide a special routine for spawning new \TeX processes. We allow for the possibility of the user overriding this routine with another one, perhaps using a different automation tool; it should take one argument, being the jobname suffix.

```
71 \providecommand{\SpawnedCompiler}{latexmk -silent -synctex=1
72   ↪ -interaction=batchmode }
73 \providecommand{\SpawnedTeX}{\SpawnedCompiler}
74 \providecommand{\SpawnedPDFTeX}{\SpawnedCompiler -pdf }
75 \providecommand{\SpawnedLuaTeX}{\SpawnedCompiler -pdflua }
76 \providecommand{\SpawnedXeTeX}{\SpawnedCompiler -pdfxe }
77 \providecommand{\BeamerswitchSpawn}[1]{%
78   \ifbool{PDFTeX}{%
79     \ShellEscape{\SpawnedPDFTeX -jobname=\jobname#1 \jobname}
80   }{%
81     \ifbool{LuaTeX}{%
82       \ShellEscape{\SpawnedLuaTeX -jobname=\jobname#1 \jobname}
83     }{%
84       \ifbool{XeTeX}{%
85         \ShellEscape{\SpawnedXeTeX -jobname=\jobname#1 \jobname}
86       }{%
87         \ShellEscape{\SpawnedTeX -jobname=\jobname#1 \jobname}
88       }%
89     }%
90   }%
}
```

We check for special jobnames and use them to override the above mode-related options. In certain circumstances, the jobname is wrapped in quote marks, so in that case we strip them off before running the tests.

```
91 \IfBeginWith*\jobname{"}{%
92   \IfEndWith*\jobname"}{%
93     \StrGobbleLeft{\jobname}{1}[\JobName]%
94     \StrGobbleRight{\JobName}{1}[\JobName]%
95     }{\let\JobName\jobname}%
96   }{\let\JobName\jobname}
```

Now we run the tests. Note that the `also` options are only acted upon if the all the tests fail.

```
97 \IfEndWith*\JobName{\BeamerSuffix}{%
98   \setkeys[DC]{beamerswitch}{beamer=true}
99 }{%
100 \IfEndWith*\JobName{\TransSuffix}{%
101   \setkeys[DC]{beamerswitch}{trans=true}
102 }{%
103 \IfEndWith*\JobName{\HandoutSuffix}{%
104   \setkeys[DC]{beamerswitch}{handout=true}
105 }{%
106 \IfEndWith*\JobName{\ArticleSuffix}{%
107   \setkeys[DC]{beamerswitch}{article=true}
108 }{%
109   \ifbool{DC@beamerswitch@also@beamer}{%

```

```

110     \BeamerSwitchSpawn{\BeamerSuffix}%
111     {}
112     \ifbool{DC@beamerswitch@alsotrans}{%
113     \BeamerSwitchSpawn{\TransSuffix}%
114     }{}
115     \ifbool{DC@beamerswitch@alsohandout}{%
116     \BeamerSwitchSpawn{\HandoutSuffix}%
117     }{}
118     \ifbool{DC@beamerswitch@alsoarticle}{%
119     \BeamerSwitchSpawn{\ArticleSuffix}%
120     }{}
121     }%
122   }%
123 }%
124 }%

```

9.4 Setting up modes

For article mode, we load the `article` class and the `beamerarticle` support package. Apologies for anyone hoping for `scrartcl` or `memoir` alternatives.

```

125 \ifbool{DC@beamerswitch@article}{%
126 \LoadClass{article}
127 \RequirePackage{beamerarticle}

```

It seems as though `beamerarticle` expects `hyperref` to be loaded, but doesn't actually do it itself. So we oblige, using the default options specified by `beamer`.

```

128 \ifbool{DC@beamerswitch@nohyperref}{}{}%
129 \RequirePackage[bookmarks=true,%
130 bookmarksopen=true,%
131 pdfborder={0 0 0},%
132 pdfhighlight={/N},%
133 linkbordercolor={.5 .5 .5}]{hyperref}%
134 }

```

While `beamer` takes care of adding presentation metadata to the PDF properties, `beamerarticle` misses the title and author properties. (It does manage to set the subject and keywords, though.) We achieve parity with some additional `\hypersetup`. Note that `beamerarticle` appends the subtitle to `\@title` with a linebreak and this does odd things in the context of `pdftitle`, so we fix it with `\pdfstringdefDisableCommands`.

```

135 \AtBeginDocument{%
136 \ifpackageloaded{hyperref}{%
137 \pdfstringdefDisableCommands{\def\<#1>#2{ - #2}}
138 \begingroup
139 \hypersetup{pdftitle={\@title}}%
140 \def\and{\unskip, }%
141 \let\thanks=\@gobble
142 \let\inst=\@gobble
143 \hypersetup{pdfauthor={\@author}}%
144 \endgroup
145 }{}%

```

```
146 }
147 }{%
```

For the presentation modes, we load the `beamer` class with appropriate options. Since we are targeting users wanting different versions of their presentations with the same code, we activate `ignorenonframetext`.

```
148 \ifbool{DC@beamerswitch@handout}{%
149 \LoadClass[ignorenonframetext,handout]{beamer}
```

Handout mode lays multiple slides out on a single page. For this we use `pgfpages`. The actual configuration is handled later.

```
150 \RequirePackage{pgfpages}
```

We also activate `ignorenonframetext` for the other two modes.

```
151 }{%
152 \ifbool{DC@beamerswitch@trans}{%
153 \LoadClass[ignorenonframetext,trans]{beamer}
154 }{%
155 \LoadClass[ignorenonframetext]{beamer}
156 }%
157 }
158 }
```

9.5 Mode-independent layout

We implement the option that formats institution markers in text mode rather than math mode.

```
159 \ifbool{DC@beamerswitch@textinst}{%
160 \def\beamer@insttitle#1{\textsuperscript{#1}}
161 \def\beamer@instinst#1{\textsuperscript{#1}\ignorespaces}
162 }{}
```

9.6 Handout layout

In theory it would be nice to anticipate the paper size that the article mode would use, and pass that as an option to `\pgfpagesuselayout` but as that's unlikely to be clean code, we settle here for setting it with an option.

```
163 \def\beamerswitch@handoutpaper{a4paper}
164 \define@key[HL]{beamerswitch}{paper}{%
165 \def\beamerswitch@handoutpaper{#1}%
166 }
```

The `nup` option specifies how many slides to include per page. The 'plus' keyword indicates a layout with additional gaps for writing.

```

167 \newcounter{beamerswitch@nupcase}
168 \setcounter{beamerswitch@nupcase}{7}
169 \define@choicekey+{HL}{beamerswitch}{nup}[\val\nr]{1, 1plus, 2, 3, 3plus, 4,
↪ 4plus, 6, 8}{%
170 \setcounter{beamerswitch@nupcase}{\nr}
171 }{%
172 \ClassWarning{beamerswitch}{Value of `nup' not recognized.
173 Allowed values are 1, 1plus, 2, 3, 3plus, 4, 4plus, 6, and 8.}%
174 }

```

The `borders` option switches on borders around the slides on handout pages (and gaps where slides would appear if there were enough). The value is used to set the width of the border.

This is implemented as a PGF drawing command, which is initially set up to do nothing but gets filled out if the option is selected. As part of this, we calculate the number of the current slide (handoutpno gives the current page number minus one; `\beamerswitch@nup` is the number of slides per page; and `\pgf@cpn` gives the count of the current slide on the current page). If this exceeds the total number of slides, we suppress the border.

```

175 \newcommand*{\beamerswitch@Border}{\relax}
176 \define@key[HL]{beamerswitch}{border}[0.4pt]{%
177 \RequirePackage{pgf}%
178 \ifdimcomp{#1}>{0pt}{%
179 \renewcommand*{\beamerswitch@Border}{%
180 \ifnumcomp{(\value{handoutpno} * \beamerswitch@nup) + \the\pgf@cpn}{%
181 >}{\beamer@endpageofdocument}{%
182 \relax
183 }{%
184 \pgfsetlinewidth{#1}\pgfstroke
185 }%
186 }%
187 }{%
188 \renewcommand*{\beamerswitch@Border}{\relax}%
189 }%
190 }

```

The `margin` option controls how much white space is added around each slide on handout pages. It corresponds to the `border shrink` option of `\pgfpagesuselayout`.

```

191 \newlength{\beamerswitch@margin}
192 \setlength{\beamerswitch@margin}{5mm}
193 \define@key[HL]{beamerswitch}{margin}[0pt]{%
194 \setlength{\beamerswitch@margin}{#1}%
195 }

```

The `align` option chooses whether to rejig the positions of the slides on the page so that the effective page margin is the same as, rather than half, the space between adjacent slides.

```

196 \define@boolkey[HL]{beamerswitch}{align}[true]{}

```

The `pnos` option switches on page numbers for handout pages. The height at which

the baseline of the number sits, relative to the bottom edge of the paper, is given by the length `\handoutpnobaseline`.

```

197 \newlength{\handoutpnobaseline}
198 \setlength{\handoutpnobaseline}{5mm}
199 \newcounter{handoutpno}
200 \define@boolkey[HL]{beamerswitch}{pnos}[true]{}

```

In order to implement the page numbers, we need to add a hook to the `pgfpages` shipout routine.

```

201 \def\beamerswitch@footer{}
202 \patchcmd{\pgfpages@buildshipoutbox}{%
203   \pgfsys@endpicture
204 }{%
205   \beamerswitch@footer\pgfsys@endpicture
206 }{}{}

```

We set up the `\handoutlayout` command for applying these options.

The hook `\beamerswitch@footer` is used to step the page number counter `handoutpno`; if page numbering is active, it also places the number on the page centered and `\handoutpnobaseline` up from the bottom.

The length `\beamerswitch@pnoadjust` is, conceptually, the height of the page number. When page numbers are active, the margin around slides is automatically increased to guarantee that the top of the page number will not be higher than the bottom of the lowest slide. Currently this does not account for extra whitespace arising from aspect ratio issues. When the `align` option is active, the margin at the bottom of the page is increased, but to save a register we make the adjustment to `\beamerswitch@pnoadjust` instead of a copy of `\beamerswitch@margin`.

```

207 \newlength{\beamerswitch@pnoadjust}
208 \newcommand*\handoutlayout[1]{%
209   \only<handout>{%
210     \setlength{\beamerswitch@pnoadjust}{1em}%
211     \setkeys[HL]{beamerswitch}{#1}%
212     \ifbool{HL@beamerswitch@pnos}{%
213       \def\beamerswitch@footer{%
214         \stepcounter{handoutpno}%
215         \setbox0\vbox{\makebox[0pt][c]{\arabic{handoutpno}}}%
216         \pgfsys@beginscope
217         \pgflevel{\pgftransformshift{%
218           \pgfpoint{.5\pgfphysicalwidth}{\handoutpnobaseline}}}%
219         \wd0=0pt%
220         \dp0=-\ht0%
221         \pgfsys@hbox0%
222         \pgfsys@endscope
223       }%
224       \ifbool{HL@beamerswitch@align}{%
225         \ifcase\value{beamerswitch@nupcase}\relax
226         \relax
227         \or
228         \addtolength{\beamerswitch@pnoadjust}{-0.333\beamerswitch@margin}%
229         \or

```



```

230     \addtolength{\beamerswitch@pnoadjust}{-0.333\beamerswitch@margin}%
231     \or
232     \addtolength{\beamerswitch@pnoadjust}{-0.5\beamerswitch@margin}%
233     \or
234     \addtolength{\beamerswitch@pnoadjust}{-0.5\beamerswitch@margin}%
235     \or
236     \addtolength{\beamerswitch@pnoadjust}{-0.333\beamerswitch@margin}%
237     \or
238     \addtolength{\beamerswitch@pnoadjust}{-0.6\beamerswitch@margin}%
239     \or
240     \addtolength{\beamerswitch@pnoadjust}{-0.5\beamerswitch@margin}%
241     \or
242     \addtolength{\beamerswitch@pnoadjust}{-0.6\beamerswitch@margin}%
243     \fi
244   }{}%
245   \ifdimcomp{\beamerswitch@margin}{<}%
246     {\handoutpnobaseline + \beamerswitch@pnoadjust}{%
247     \setlength{\beamerswitch@margin}%
248     {\the\dimexpr\handoutpnobaseline + \beamerswitch@pnoadjust\relax}%
249   }{}%
250 }{}%
251 \def\beamerswitch@footer{\stepcounter{handoutpno}}%
252 }%

```

The value of the `nup` option is used both to select the layout and set the value of `\beamerswitch@nup`. The latter is used to suppress unwanted borders and check if `\handoutlayout` has been called.

```

253 \ifcase\value{beamerswitch@nupcase}\relax
254   \def\beamerswitch@nup{1}%
255   \pgfpagesuselayout{1 by 1}[\beamerswitch@handoutpaper,%
256   landscape,border shrink=\the\beamerswitch@margin]%
257 \or
258   \def\beamerswitch@nup{1}%
259   \pgfpagesuselayout{1 by 1 narrow}[\beamerswitch@handoutpaper,%
260   border shrink=\the\beamerswitch@margin]%
261 \or
262   \def\beamerswitch@nup{2}%
263   \pgfpagesuselayout{1 by 2}[\beamerswitch@handoutpaper,%
264   border shrink=\the\beamerswitch@margin]%
265 \or
266   \def\beamerswitch@nup{3}%
267   \pgfpagesuselayout{1 by 3}[\beamerswitch@handoutpaper,%
268   border shrink=\the\beamerswitch@margin]%
269 \or
270   \def\beamerswitch@nup{3}%
271   \pgfpagesuselayout{1 by 3 narrow}[\beamerswitch@handoutpaper,%
272   border shrink=\the\beamerswitch@margin]%
273 \or
274   \def\beamerswitch@nup{4}%
275   \pgfpagesuselayout{2 by 2}[\beamerswitch@handoutpaper,%
276   landscape,border shrink=\the\beamerswitch@margin]%
277 \or
278   \def\beamerswitch@nup{4}%
279   \pgfpagesuselayout{1 by 4 narrow}[\beamerswitch@handoutpaper,%
280   border shrink=\the\beamerswitch@margin]%

```

```

281 \or
282 \def\beamerswitch@nup{6}%
283 \pgfpagesuselayout{2 by 3}[\beamerswitch@handoutpaper,%
284 border shrink=\the\beamerswitch@margin]%
285 \or
286 \def\beamerswitch@nup{8}%
287 \pgfpagesuselayout{2 by 4}[\beamerswitch@handoutpaper,%
288 border shrink=\the\beamerswitch@margin]%
289 \fi
290 }%
291 }

```

We initialize the class with the defaults set above.

```

292 \AtEndPreamble{%
293 \ifdef{\beamerswitch@nup}{}{}%
294 \handoutlayout{}%
295 }%
296 }

```

Though `pgfpages` defines some perfectly fine layouts, we need to add configurability to the existing ones and provide some new ones.

The ‘1 by 1’ layout has a single slide per page.

```

297 \mode<handout>{%
298 \pgfpagesdeclarelayout{1 by 1}
299 {
300 \edef\pgfpageoptionheight{\the\paperheight}
301 \edef\pgfpageoptionwidth{\the\paperwidth}
302 \edef\pgfpageoptionborder{0pt}
303 \def\pgfpageoptionfirstshipout{1}
304 }
305 {
306 \pgfpagesphysicalpageoptions
307 {%
308 logical pages=1,%
309 physical height=\pgfpageoptionheight,%
310 physical width=\pgfpageoptionwidth,%
311 current logical shipout=\pgfpageoptionfirstshipout%
312 }
313 \pgfpageslogicalpageoptions{1}
314 {%
315 border shrink=\pgfpageoptionborder,%
316 border code=\beamerswitch@Border,%
317 resized width=\pgfphysicalwidth,%
318 resized height=\pgfphysicalheight,%
319 center=\pgfpoint{.5\pgfphysicalwidth}{.5\pgfphysicalheight}%
320 }%
321 }%

```

The ‘1 by 1 narrow’ layout is similar to the normal 2 on 1 layout, but there is a notes area instead of the second slide.

```

322 \pgfpagesdeclarelayout{1 by 1 narrow}
323 {

```

```

324 \edef\pgfpageoptionheight{\the\paperwidth} % landscaped by default
325 \edef\pgfpageoptionwidth{\the\paperheight}
326 \def\pgfpageoptionborder{0pt}
327 \def\pgfpageoptionfirstshipout{1}
328 }
329 {
330 \pgfpagesphysicalpageoptions
331 {%
332 logical pages=1,%
333 physical height=\pgfpageoptionheight,%
334 physical width=\pgfpageoptionwidth,%
335 current logical shipout=\pgfpageoptionfirstshipout%
336 }
337 \ifdim\paperheight>\paperwidth\relax
338 % put side-by-side
339 \pgfpageslogicalpageoptions{1}
340 {%
341 border shrink=\pgfpageoptionborder,%
342 border code=\beamerswitch@Border,%
343 resized width=.5\pgfphysicalwidth,%
344 resized height=\pgfphysicalheight,%
345 center=\ifbool{HL@beamerswitch@align}{%
346 \pgfpoint{.25\pgfphysicalwidth +
347 → 0.333\beamerswitch@margin}{.5\pgfphysicalheight}%
348 }{%
349 \pgfpoint{.25\pgfphysicalwidth}{.5\pgfphysicalheight}%
350 }%
351 }%
352 % stack on top of one another
353 \pgfpageslogicalpageoptions{1}
354 {%
355 border shrink=\pgfpageoptionborder,%
356 border code=\beamerswitch@Border,%
357 resized width=\pgfphysicalwidth,%
358 resized height=.5\pgfphysicalheight,%
359 center=\ifbool{HL@beamerswitch@align}{%
360 \pgfpoint{.5\pgfphysicalwidth}{.75\pgfphysicalheight -
361 → 0.333\beamerswitch@margin}%
362 }{%
363 \pgfpoint{.5\pgfphysicalwidth}{.75\pgfphysicalheight}%
364 }%
365 }%
366 \fi
367 }

```

The ‘1 by 2’ layout is similar to the normal 2 on 1 layout.

```

367 \pgfpagesdeclarelayout{1 by 2}
368 {
369 \edef\pgfpageoptionheight{\the\paperwidth} % landscaped by default
370 \edef\pgfpageoptionwidth{\the\paperheight}
371 \def\pgfpageoptionborder{0pt}
372 \def\pgfpageoptionfirstshipout{1}
373 }
374 {

```

```

375 \pgfpagesphysicalpageoptions
376 {%
377     logical pages=2,%
378     physical height=\pgfpageoptionheight,%
379     physical width=\pgfpageoptionwidth,%
380     current logical shipout=\pgfpageoptionfirstshipout%
381 }
382 \ifdim\paperheight>\paperwidth\relax
383 % put side-by-side
384 \pgfpageslogicalpageoptions{1}
385 {%
386     border shrink=\pgfpageoptionborder,%
387     border code=\beamerswitch@Border,%
388     resized width=.5\pgfphysicalwidth,%
389     resized height=\pgfphysicalheight,%
390     center=\ifbool{HL@beamerswitch@align}{%
391         \pgfpoint{.25\pgfphysicalwidth +
392             ↪ 0.333\beamerswitch@margin}{.5\pgfphysicalheight}}%
393     }{%
394         \pgfpoint{.25\pgfphysicalwidth}{.5\pgfphysicalheight}}%
395 }%
396 \pgfpageslogicalpageoptions{2}
397 {%
398     border shrink=\pgfpageoptionborder,%
399     border code=\beamerswitch@Border,%
400     resized width=.5\pgfphysicalwidth,%
401     resized height=\pgfphysicalheight,%
402     center=\ifbool{HL@beamerswitch@align}{%
403         \pgfpoint{.75\pgfphysicalwidth -
404             ↪ 0.333\beamerswitch@margin}{.5\pgfphysicalheight}}%
405     }{%
406         \pgfpoint{.75\pgfphysicalwidth}{.5\pgfphysicalheight}}%
407 }%
408 \else
409 % stack on top of one another
410 \pgfpageslogicalpageoptions{1}
411 {%
412     border shrink=\pgfpageoptionborder,%
413     border code=\beamerswitch@Border,%
414     resized width=\pgfphysicalwidth,%
415     resized height=.5\pgfphysicalheight,%
416     center=\ifbool{HL@beamerswitch@align}{%
417         \pgfpoint{.5\pgfphysicalwidth}{.75\pgfphysicalheight -
418             ↪ 0.333\beamerswitch@margin}}%
419     }{%
420         \pgfpoint{.5\pgfphysicalwidth}{.75\pgfphysicalheight}}%
421 }%
422 \pgfpageslogicalpageoptions{2}
423 {%
424     border shrink=\pgfpageoptionborder,%
425     border code=\beamerswitch@Border,%
426     resized width=\pgfphysicalwidth,%
427     resized height=.5\pgfphysicalheight,%

```

```

428     center=\ifbool{HL@beamerswitch@align}{%
429         \pgfpoint{.5\pgfphysicalwidth}{.25\pgfphysicalheight +
         ↪ 0.333\beamerswitch@margin}%
430     }{%
431         \pgfpoint{.5\pgfphysicalwidth}{.25\pgfphysicalheight}%
432     }%
433 }%
434 \fi
435 }

```

The ‘1 by 3’ layout is similar to the ‘1 by 2’, but with an extra row.

```

436 \pgfpagesdeclarelayout{1 by 3}
437 {
438     \edef\pgfpageoptionheight{\the\paperwidth} % landscaped by default
439     \edef\pgfpageoptionwidth{\the\paperheight}
440     \def\pgfpageoptionborder{0pt}
441     \def\pgfpageoptionfirstshipout{1}
442 }
443 {
444     \pgfpagesphysicalpageoptions
445     {%
446         logical pages=3,%
447         physical height=\pgfpageoptionheight,%
448         physical width=\pgfpageoptionwidth,%
449         current logical shipout=\pgfpageoptionfirstshipout%
450     }
451     \ifdim\paperheight>\paperwidth\relax
452     % put side-by-side
453     \pgfpageslogicalpageoptions{1}
454     {%
455         border shrink=\pgfpageoptionborder,%
456         border code=\beamerswitch@Border,%
457         resized width=.333\pgfphysicalwidth,%
458         resized height=\pgfphysicalheight,%
459         center=\ifbool{HL@beamerswitch@align}{%
460             \pgfpoint{.167\pgfphysicalwidth +
             ↪ 0.5\beamerswitch@margin}{.5\pgfphysicalheight}%
461         }{%
462             \pgfpoint{.167\pgfphysicalwidth}{.5\pgfphysicalheight}%
463         }%
464     }%
465     \pgfpageslogicalpageoptions{2}
466     {%
467         border shrink=\pgfpageoptionborder,%
468         border code=\beamerswitch@Border,%
469         resized width=.333\pgfphysicalwidth,%
470         resized height=\pgfphysicalheight,%
471         center=\pgfpoint{.5\pgfphysicalwidth}{.5\pgfphysicalheight}%
472     }%
473     \pgfpageslogicalpageoptions{3}
474     {%
475         border shrink=\pgfpageoptionborder,%
476         border code=\beamerswitch@Border,%
477         resized width=.333\pgfphysicalwidth,%
478         resized height=\pgfphysicalheight,%

```

```

479     center=\ifbool{HL@beamerswitch@align}{%
480       \pgfpoint{.833\pgfphysicalwidth -
481         ↪ 0.5\beamerswitch@margin}{.5\pgfphysicalheight}%
482     }{%
483       \pgfpoint{.833\pgfphysicalwidth}{.5\pgfphysicalheight}%
484     }%
485   \else
486   % stack on top of one another
487   \pgfpageslogicalpageoptions{1}
488   {%
489     border shrink=\pgfpageoptionborder,%
490     border code=\beamerswitch@Border,%
491     resized width=\pgfphysicalwidth,%
492     resized height=.333\pgfphysicalheight,%
493     center=\ifbool{HL@beamerswitch@align}{%
494       \pgfpoint{.5\pgfphysicalwidth}{.833\pgfphysicalheight -
495         ↪ 0.5\beamerswitch@margin}%
496     }{%
497       \pgfpoint{.5\pgfphysicalwidth}{.833\pgfphysicalheight}%
498     }%
499     \pgfpageslogicalpageoptions{2}
500     {%
501       border shrink=\pgfpageoptionborder,%
502       border code=\beamerswitch@Border,%
503       resized width=\pgfphysicalwidth,%
504       resized height=.333\pgfphysicalheight,%
505       center=\pgfpoint{.5\pgfphysicalwidth}{.5\pgfphysicalheight}%
506     }%
507     \pgfpageslogicalpageoptions{3}
508     {%
509       border shrink=\pgfpageoptionborder,%
510       border code=\beamerswitch@Border,%
511       resized width=\pgfphysicalwidth,%
512       resized height=.333\pgfphysicalheight,%
513       center=\ifbool{HL@beamerswitch@align}{%
514         \pgfpoint{.5\pgfphysicalwidth}{.167\pgfphysicalheight +
515           ↪ 0.5\beamerswitch@margin}%
516       }{%
517         \pgfpoint{.5\pgfphysicalwidth}{.167\pgfphysicalheight}%
518       }%
519     }%
520   \fi
}

```

The ‘1 by 3 narrow’ layout is like the ‘1 by 3’ layout but restricted to the left (or top) half of the page.

```

521   \pgfpagesdeclarelayout{1 by 3 narrow}
522   {
523     \edef\pgfpageoptionheight{\the\paperwidth} % landscaped by default
524     \edef\pgfpageoptionwidth{\the\paperheight}
525     \def\pgfpageoptionborder{0pt}
526     \def\pgfpageoptionfirstshipout{1}
527   }

```

```

528 {
529   \pgfpagesphysicalpageoptions
530   {%
531     logical pages=3,%
532     physical height=\pgfpageoptionheight,%
533     physical width=\pgfpageoptionwidth,%
534     current logical shipout=\pgfpageoptionfirstshipout%
535   }
536   \ifdim\paperheight>\paperwidth\relax
537   % put side-by-side
538   \pgfpageslogicalpageoptions{1}
539   {%
540     border shrink=\pgfpageoptionborder,%
541     border code=\beamerswitch@Border,%
542     resized width=.333\pgfphysicalwidth,%
543     resized height=.5\pgfphysicalheight,%
544     center=\ifbool{HL@beamerswitch@align}{%
545       \pgfpoint{.167\pgfphysicalwidth + 0.5\beamerswitch@margin}%
546       {.75\pgfphysicalheight - 0.5\beamerswitch@margin}%
547     }{%
548       \pgfpoint{.167\pgfphysicalwidth}{.75\pgfphysicalheight}%
549     }%
550   }%
551   \pgfpageslogicalpageoptions{2}
552   {%
553     border shrink=\pgfpageoptionborder,%
554     border code=\beamerswitch@Border,%
555     resized width=.333\pgfphysicalwidth,%
556     resized height=.5\pgfphysicalheight,%
557     center=\ifbool{HL@beamerswitch@align}{%
558       \pgfpoint{.5\pgfphysicalwidth}{.75\pgfphysicalheight -
559       → 0.5\beamerswitch@margin}%
560     }{%
561       \pgfpoint{.5\pgfphysicalwidth}{.75\pgfphysicalheight}%
562     }%
563   }%
564   \pgfpageslogicalpageoptions{3}
565   {%
566     border shrink=\pgfpageoptionborder,%
567     border code=\beamerswitch@Border,%
568     resized width=.333\pgfphysicalwidth,%
569     resized height=.5\pgfphysicalheight,%
570     center=\ifbool{HL@beamerswitch@align}{%
571       \pgfpoint{.833\pgfphysicalwidth - 0.5\beamerswitch@margin}%
572       {.75\pgfphysicalheight - 0.5\beamerswitch@margin}%
573     }{%
574       \pgfpoint{.833\pgfphysicalwidth}{.75\pgfphysicalheight}%
575     }%
576   }%
577   \else
578   % stack on top of one another
579   \pgfpageslogicalpageoptions{1}
580   {%
581     border shrink=\pgfpageoptionborder,%
582     border code=\beamerswitch@Border,%
583     resized width=.5\pgfphysicalwidth,%

```

```

583     resized height=.333\pgfphysicalheight,%
584     center=\ifbool{HL@beamerswitch@align}{%
585         \pgfpoint{.25\pgfphysicalwidth + 0.5\beamerswitch@margin}%
586         {.833\pgfphysicalheight - 0.5\beamerswitch@margin}%
587     }{%
588         \pgfpoint{.25\pgfphysicalwidth}{.833\pgfphysicalheight}%
589     }%
590 }%
591 \pgfpageslogicalpageoptions{2}
592 {%
593     border shrink=\pgfpageoptionborder,%
594     border code=\beamerswitch@Border,%
595     resized width=.5\pgfphysicalwidth,%
596     resized height=.333\pgfphysicalheight,%
597     center=\ifbool{HL@beamerswitch@align}{%
598         \pgfpoint{.25\pgfphysicalwidth +
599             ↪ 0.5\beamerswitch@margin}{.5\pgfphysicalheight}%
600     }{%
601         \pgfpoint{.25\pgfphysicalwidth}{.5\pgfphysicalheight}%
602     }%
603 }%
604 \pgfpageslogicalpageoptions{3}
605 {%
606     border shrink=\pgfpageoptionborder,%
607     border code=\beamerswitch@Border,%
608     resized width=.5\pgfphysicalwidth,%
609     resized height=.333\pgfphysicalheight,%
610     center=\ifbool{HL@beamerswitch@align}{%
611         \pgfpoint{.25\pgfphysicalwidth + 0.5\beamerswitch@margin}%
612         {.167\pgfphysicalheight + 0.5\beamerswitch@margin}%
613     }{%
614         \pgfpoint{.25\pgfphysicalwidth}{.167\pgfphysicalheight}%
615     }%
616 }%
617 \fi
}

```

The ‘2 by 2’ layout is similar to the normal 4 on 1 layout.

```

618     \pgfpagesdeclarelayout{2 by 2}
619     {
620         \edef\pgfpageoptionheight{\the\paperheight}
621         \edef\pgfpageoptionwidth{\the\paperwidth}
622         \edef\pgfpageoptionborder{0pt}
623     }
624     {
625         \pgfpagesphysicalpageoptions
626         {%
627             logical pages=4,%
628             physical height=\pgfpageoptionheight,%
629             physical width=\pgfpageoptionwidth%
630         }
631         \pgfpageslogicalpageoptions{1}
632         {%
633             border shrink=\pgfpageoptionborder,%
634             border code=\beamerswitch@Border,%

```



```

635     resized width=.5\pgfphysicalwidth,%
636     resized height=.5\pgfphysicalheight,%
637     center=\ifbool{HL@beamerswitch@align}{%
638         \pgfpoint{.25\pgfphysicalwidth + 0.333\beamerswitch@margin}%
639         {.75\pgfphysicalheight - 0.333\beamerswitch@margin}%
640     }{%
641         \pgfpoint{.25\pgfphysicalwidth}{.75\pgfphysicalheight}%
642     }%
643 }%
644 \pgfpageslogicalpageoptions{2}
645 {%
646     border shrink=\pgfpageoptionborder,%
647     border code=\beamerswitch@Border,%
648     resized width=.5\pgfphysicalwidth,%
649     resized height=.5\pgfphysicalheight,%
650     center=\ifbool{HL@beamerswitch@align}{%
651         \pgfpoint{.75\pgfphysicalwidth - 0.333\beamerswitch@margin}%
652         {.75\pgfphysicalheight - 0.333\beamerswitch@margin}%
653     }{%
654         \pgfpoint{.75\pgfphysicalwidth}{.75\pgfphysicalheight}%
655     }%
656 }%
657 \pgfpageslogicalpageoptions{3}
658 {%
659     border shrink=\pgfpageoptionborder,%
660     border code=\beamerswitch@Border,%
661     resized width=.5\pgfphysicalwidth,%
662     resized height=.5\pgfphysicalheight,%
663     center=\ifbool{HL@beamerswitch@align}{%
664         \pgfpoint{.25\pgfphysicalwidth + 0.333\beamerswitch@margin}%
665         {.25\pgfphysicalheight + 0.333\beamerswitch@margin}%
666     }{%
667         \pgfpoint{.25\pgfphysicalwidth}{.25\pgfphysicalheight}%
668     }%
669 }%
670 \pgfpageslogicalpageoptions{4}
671 {%
672     border shrink=\pgfpageoptionborder,%
673     border code=\beamerswitch@Border,%
674     resized width=.5\pgfphysicalwidth,%
675     resized height=.5\pgfphysicalheight,%
676     center=\ifbool{HL@beamerswitch@align}{%
677         \pgfpoint{.75\pgfphysicalwidth - 0.333\beamerswitch@margin}%
678         {.25\pgfphysicalheight + 0.333\beamerswitch@margin}%
679     }{%
680         \pgfpoint{.75\pgfphysicalwidth}{.25\pgfphysicalheight}%
681     }%
682 }%
683 }

```

The ‘1 by 4 narrow’ layout puts four slides in a column on the left half of the page (or in a row on the top half).

```

684 \pgfpagesdeclarelayout{1 by 4 narrow}
685 {
686     \edef\pgfpageoptionheight{\the\paperwidth} % landscaped by default

```

```

687 \edef\pgfpageoptionwidth{\the\paperheight}
688 \def\pgfpageoptionborder{0pt}
689 \def\pgfpageoptionfirstshipout{1}
690 }
691 {
692 \pgfpagesphysicalpageoptions
693 {%
694 logical pages=4,%
695 physical height=\pgfpageoptionheight,%
696 physical width=\pgfpageoptionwidth,%
697 current logical shipout=\pgfpageoptionfirstshipout%
698 }
699 \ifdim\paperheight>\paperwidth\relax
700 % put side-by-side
701 \pgfpageslogicalpageoptions{1}
702 {%
703 border shrink=\pgfpageoptionborder,%
704 border code=\beamerswitch@Border,%
705 resized width=.25\pgfphysicalwidth,%
706 resized height=.5\pgfphysicalheight,%
707 center=\ifbool{HL@beamerswitch@align}{%
708 \pgfpoint{.125\pgfphysicalwidth + 0.6\beamerswitch@margin}%
709 {.75\pgfphysicalheight - 0.333\beamerswitch@margin}%
710 }{%
711 \pgfpoint{.125\pgfphysicalwidth}{.75\pgfphysicalheight}%
712 }%
713 }%
714 \pgfpageslogicalpageoptions{2}
715 {%
716 border shrink=\pgfpageoptionborder,%
717 border code=\beamerswitch@Border,%
718 resized width=.25\pgfphysicalwidth,%
719 resized height=.5\pgfphysicalheight,%
720 center=\ifbool{HL@beamerswitch@align}{%
721 \pgfpoint{.375\pgfphysicalwidth + 0.2\beamerswitch@margin}%
722 {.75\pgfphysicalheight - 0.333\beamerswitch@margin}%
723 }{%
724 \pgfpoint{.375\pgfphysicalwidth}{.75\pgfphysicalheight}%
725 }%
726 }%
727 \pgfpageslogicalpageoptions{3}
728 {%
729 border shrink=\pgfpageoptionborder,%
730 border code=\beamerswitch@Border,%
731 resized width=.25\pgfphysicalwidth,%
732 resized height=.5\pgfphysicalheight,%
733 center=\ifbool{HL@beamerswitch@align}{%
734 \pgfpoint{.625\pgfphysicalwidth - 0.2\beamerswitch@margin}%
735 {.75\pgfphysicalheight - 0.333\beamerswitch@margin}%
736 }{%
737 \pgfpoint{.625\pgfphysicalwidth}{.75\pgfphysicalheight}%
738 }%
739 }%
740 \pgfpageslogicalpageoptions{4}
741 {%
742 border shrink=\pgfpageoptionborder,%

```

```

743 border code=\beamerswitch@Border,%
744 resized width=.25\pgfphysicalwidth,%
745 resized height=.5\pgfphysicalheight,%
746 center=\ifbool{HL@beamerswitch@align}{%
747   \pgfpoint{.875\pgfphysicalwidth - 0.6\beamerswitch@margin}%
748   {.75\pgfphysicalheight - 0.333\beamerswitch@margin}%
749 }{%
750   \pgfpoint{.875\pgfphysicalwidth}{.75\pgfphysicalheight}%
751 }%
752 }%
753 \else
754 % stack on top of one another
755 \pgfpageslogicalpageoptions{1}
756 {%
757 border shrink=\pgfpageoptionborder,%
758 border code=\beamerswitch@Border,%
759 resized width=.5\pgfphysicalwidth,%
760 resized height=.25\pgfphysicalheight,%
761 center=\ifbool{HL@beamerswitch@align}{%
762   \pgfpoint{.25\pgfphysicalwidth + 0.333\beamerswitch@margin}%
763   {.875\pgfphysicalheight - 0.6\beamerswitch@margin}%
764 }{%
765   \pgfpoint{.25\pgfphysicalwidth}{.875\pgfphysicalheight}%
766 }%
767 }%
768 \pgfpageslogicalpageoptions{2}
769 {%
770 border shrink=\pgfpageoptionborder,%
771 border code=\beamerswitch@Border,%
772 resized width=.5\pgfphysicalwidth,%
773 resized height=.25\pgfphysicalheight,%
774 center=\ifbool{HL@beamerswitch@align}{%
775   \pgfpoint{.25\pgfphysicalwidth + 0.333\beamerswitch@margin}%
776   {.625\pgfphysicalheight - 0.2\beamerswitch@margin}%
777 }{%
778   \pgfpoint{.25\pgfphysicalwidth}{.625\pgfphysicalheight}%
779 }%
780 }%
781 \pgfpageslogicalpageoptions{3}
782 {%
783 border shrink=\pgfpageoptionborder,%
784 border code=\beamerswitch@Border,%
785 resized width=.5\pgfphysicalwidth,%
786 resized height=.25 \pgfphysicalheight,%
787 center=\ifbool{HL@beamerswitch@align}{%
788   \pgfpoint{.25\pgfphysicalwidth + 0.333\beamerswitch@margin}%
789   {.375\pgfphysicalheight + 0.2\beamerswitch@margin}%
790 }{%
791   \pgfpoint{.25\pgfphysicalwidth}{.375\pgfphysicalheight}%
792 }%
793 }%
794 \pgfpageslogicalpageoptions{4}
795 {%
796 border shrink=\pgfpageoptionborder,%
797 border code=\beamerswitch@Border,%
798 resized width=.5\pgfphysicalwidth,%

```

```

799     resized height=.25 \pgfphysicalheight,%
800     center=\ifbool{HL@beamerswitch@align}{%
801         \pgfpoint{.25\pgfphysicalwidth + 0.333\beamerswitch@margin}%
802         {.125\pgfphysicalheight + 0.6\beamerswitch@margin}%
803     }{%
804         \pgfpoint{.25\pgfphysicalwidth}{.125\pgfphysicalheight}%
805     }%
806 }%
807 \fi
808 }

```

The '2 by 3' layout positions the slides as three rows of two slides each.

```

809 \pgfpagesdeclarelayout{2 by 3}
810 {
811     \edef\pgfpageoptionheight{\the\paperwidth} % landscaped by default
812     \edef\pgfpageoptionwidth{\the\paperheight}
813     \def\pgfpageoptionborder{0pt}
814     \def\pgfpageoptionfirstshipout{1}
815 }
816 {
817     \pgfpagesphysicalpageoptions
818     {%
819         logical pages=6,%
820         physical height=\pgfpageoptionheight,%
821         physical width=\pgfpageoptionwidth,%
822         current logical shipout=\pgfpageoptionfirstshipout%
823     }
824     \ifdim\paperheight>\paperwidth\relax
825     % put side-by-side
826     \pgfpageslogicalpageoptions{1}
827     {%
828         border shrink=\pgfpageoptionborder,%
829         border code=\beamerswitch@Border,%
830         resized width=.333\pgfphysicalwidth,%
831         resized height=.5\pgfphysicalheight,%
832         center=\ifbool{HL@beamerswitch@align}{%
833             \pgfpoint{.167\pgfphysicalwidth + 0.5\beamerswitch@margin}%
834             {.75\pgfphysicalheight - 0.333\beamerswitch@margin}%
835         }{%
836             \pgfpoint{.167\pgfphysicalwidth}{.75\pgfphysicalheight}%
837         }%
838     }%
839     \pgfpageslogicalpageoptions{2}
840     {%
841         border shrink=\pgfpageoptionborder,%
842         border code=\beamerswitch@Border,%
843         resized width=.333\pgfphysicalwidth,%
844         resized height=.5\pgfphysicalheight,%
845         center=\ifbool{HL@beamerswitch@align}{%
846             \pgfpoint{.5\pgfphysicalwidth}{.75\pgfphysicalheight -
847             ↪ 0.333\beamerswitch@margin}%
848         }{%
849             \pgfpoint{.5\pgfphysicalwidth}{.75\pgfphysicalheight}%
850         }%

```

```

851 \pgfpageslogicalpageoptions{3}
852 {%
853   border shrink=\pgfpageoptionborder,%
854   border code=\beamerswitch@Border,%
855   resized width=.333\pgfphysicalwidth,%
856   resized height=.5\pgfphysicalheight,%
857   center=\ifbool{HL@beamerswitch@align}{%
858     \pgfpoint{.833\pgfphysicalwidth - 0.5\beamerswitch@margin}%
859     {.75\pgfphysicalheight - 0.333\beamerswitch@margin}%
860   }{%
861     \pgfpoint{.833\pgfphysicalwidth}{.75\pgfphysicalheight}%
862   }%
863 }%
864 \pgfpageslogicalpageoptions{4}
865 {%
866   border shrink=\pgfpageoptionborder,%
867   border code=\beamerswitch@Border,%
868   resized width=.333\pgfphysicalwidth,%
869   resized height=.5\pgfphysicalheight,%
870   center=\ifbool{HL@beamerswitch@align}{%
871     \pgfpoint{.167\pgfphysicalwidth + 0.5\beamerswitch@margin}%
872     {.25\pgfphysicalheight + 0.333\beamerswitch@margin}%
873   }{%
874     \pgfpoint{.167\pgfphysicalwidth}{.25\pgfphysicalheight}%
875   }%
876 }%
877 \pgfpageslogicalpageoptions{5}
878 {%
879   border shrink=\pgfpageoptionborder,%
880   border code=\beamerswitch@Border,%
881   resized width=.333\pgfphysicalwidth,%
882   resized height=.5\pgfphysicalheight,%
883   center=\ifbool{HL@beamerswitch@align}{%
884     \pgfpoint{.5\pgfphysicalwidth}{.25\pgfphysicalheight +
885     ↪ 0.333\beamerswitch@margin}%
886   }{%
887     \pgfpoint{.5\pgfphysicalwidth}{.25\pgfphysicalheight}%
888   }%
889 }%
890 \pgfpageslogicalpageoptions{6}
891 {%
892   border shrink=\pgfpageoptionborder,%
893   border code=\beamerswitch@Border,%
894   resized width=.333\pgfphysicalwidth,%
895   resized height=.5\pgfphysicalheight,%
896   center=\ifbool{HL@beamerswitch@align}{%
897     \pgfpoint{.833\pgfphysicalwidth - 0.5\beamerswitch@margin}%
898     {.25\pgfphysicalheight + 0.333\beamerswitch@margin}%
899   }{%
900     \pgfpoint{.833\pgfphysicalwidth}{.25\pgfphysicalheight}%
901   }%
902 }%
903 \else
904 % stack on top of one another
905 \pgfpageslogicalpageoptions{1}
906 {%

```

```

906 border shrink=\pgfpageoptionborder,%
907 border code=\beamerswitch@Border,%
908 resized width=.5\pgfphysicalwidth,%
909 resized height=.333\pgfphysicalheight,%
910 center=\ifbool{HL@beamerswitch@align}{%
911   \pgfpoint{.25\pgfphysicalwidth + 0.333\beamerswitch@margin}%
912   {.833\pgfphysicalheight - 0.5\beamerswitch@margin}%
913 }{%
914   \pgfpoint{.25\pgfphysicalwidth}{.833\pgfphysicalheight}%
915 }%
916 }%
917 \pgfpageslogicalpageoptions{2}
918 {%
919 border shrink=\pgfpageoptionborder,%
920 border code=\beamerswitch@Border,%
921 resized width=.5\pgfphysicalwidth,%
922 resized height=.333\pgfphysicalheight,%
923 center=\ifbool{HL@beamerswitch@align}{%
924   \pgfpoint{.75\pgfphysicalwidth - 0.333\beamerswitch@margin}%
925   {.833\pgfphysicalheight - 0.5\beamerswitch@margin}%
926 }{%
927   \pgfpoint{.75\pgfphysicalwidth}{.833\pgfphysicalheight}%
928 }%
929 }%
930 \pgfpageslogicalpageoptions{3}
931 {%
932 border shrink=\pgfpageoptionborder,%
933 border code=\beamerswitch@Border,%
934 resized width=.5\pgfphysicalwidth,%
935 resized height=.333\pgfphysicalheight,%
936 center=\ifbool{HL@beamerswitch@align}{%
937   \pgfpoint{.25\pgfphysicalwidth +
938     ↪ 0.333\beamerswitch@margin}{.5\pgfphysicalheight}%
939 }{%
940   \pgfpoint{.25\pgfphysicalwidth}{.5\pgfphysicalheight}%
941 }%
942 }%
943 \pgfpageslogicalpageoptions{4}
944 {%
945 border shrink=\pgfpageoptionborder,%
946 border code=\beamerswitch@Border,%
947 resized width=.5\pgfphysicalwidth,%
948 resized height=.333\pgfphysicalheight,%
949 center=\ifbool{HL@beamerswitch@align}{%
950   \pgfpoint{.75\pgfphysicalwidth -
951     ↪ 0.333\beamerswitch@margin}{.5\pgfphysicalheight}%
952 }{%
953   \pgfpoint{.75\pgfphysicalwidth}{.5\pgfphysicalheight}%
954 }%
955 }%
956 \pgfpageslogicalpageoptions{5}
957 {%
958 border shrink=\pgfpageoptionborder,%
959 border code=\beamerswitch@Border,%
960 resized width=.5\pgfphysicalwidth,%
961 resized height=.333\pgfphysicalheight,%

```

```

960     center=\ifbool{HL@beamerswitch@align}{%
961         \pgfpoint{.25\pgfphysicalwidth + 0.333\beamerswitch@margin}{%
962             {.167\pgfphysicalheight + 0.5\beamerswitch@margin}}%
963     }{%
964         \pgfpoint{.25\pgfphysicalwidth}{.167\pgfphysicalheight}%
965     }%
966 }%
967 \pgfpageslogicalpageoptions{6}
968 {%
969     border shrink=\pgfpageoptionborder,%
970     border code=\beamerswitch@Border,%
971     resized width=.5\pgfphysicalwidth,%
972     resized height=.333\pgfphysicalheight,%
973     center=\ifbool{HL@beamerswitch@align}{%
974         \pgfpoint{.75\pgfphysicalwidth - 0.333\beamerswitch@margin}{%
975             {.167\pgfphysicalheight + 0.5\beamerswitch@margin}}%
976     }{%
977         \pgfpoint{.75\pgfphysicalwidth}{.167\pgfphysicalheight}%
978     }%
979 }%
980 \fi
981 }

```

The ‘2 by 4’ layout layout positions the slides as four rows of two slides each.

```

982 \pgfpagesdeclarelayers{2 by 4}
983 {
984     \edef\pgfpageoptionheight{\the\paperwidth} % landscaped by default
985     \edef\pgfpageoptionwidth{\the\paperheight}
986     \def\pgfpageoptionborder{0pt}
987     \def\pgfpageoptionfirstshipout{1}
988 }
989 {
990     \pgfpagesphysicalpageoptions
991     {%
992         logical pages=8,%
993         physical height=\pgfpageoptionheight,%
994         physical width=\pgfpageoptionwidth,%
995         current logical shipout=\pgfpageoptionfirstshipout%
996     }
997     \ifdim\paperheight>\paperwidth\relax
998     % put side-by-side
999     \pgfpageslogicalpageoptions{1}
1000     {%
1001         border shrink=\pgfpageoptionborder,%
1002         border code=\beamerswitch@Border,%
1003         resized width=.25\pgfphysicalwidth,%
1004         resized height=.5\pgfphysicalheight,%
1005         center=\ifbool{HL@beamerswitch@align}{%
1006             \pgfpoint{.125\pgfphysicalwidth + 0.6\beamerswitch@margin}{%
1007                 {.75\pgfphysicalheight - 0.333\beamerswitch@margin}}%
1008         }{%
1009             \pgfpoint{.125\pgfphysicalwidth}{.75\pgfphysicalheight}%
1010         }%
1011     }%
1012     \pgfpageslogicalpageoptions{2}

```

```

1013  {%
1014      border shrink=\pgfpageoptionborder,%
1015      border code=\beamerswitch@Border,%
1016      resized width=.25\pgfphysicalwidth,%
1017      resized height=.5\pgfphysicalheight,%
1018      center=\ifbool{HL@beamerswitch@align}{%
1019          \pgfpoint{.375\pgfphysicalwidth + 0.2\beamerswitch@margin}%
1020              {.75\pgfphysicalheight - 0.333\beamerswitch@margin}%
1021      }{%
1022          \pgfpoint{.375\pgfphysicalwidth}{.75\pgfphysicalheight}%
1023      }%
1024  }%
1025  \pgfpageslogicalpageoptions{3}
1026  {%
1027      border shrink=\pgfpageoptionborder,%
1028      border code=\beamerswitch@Border,%
1029      resized width=.25\pgfphysicalwidth,%
1030      resized height=.5\pgfphysicalheight,%
1031      center=\ifbool{HL@beamerswitch@align}{%
1032          \pgfpoint{.625\pgfphysicalwidth - 0.2\beamerswitch@margin}%
1033              {.75\pgfphysicalheight - 0.333\beamerswitch@margin}%
1034      }{%
1035          \pgfpoint{.625\pgfphysicalwidth}{.75\pgfphysicalheight}%
1036      }%
1037  }%
1038  \pgfpageslogicalpageoptions{4}
1039  {%
1040      border shrink=\pgfpageoptionborder,%
1041      border code=\beamerswitch@Border,%
1042      resized width=.25\pgfphysicalwidth,%
1043      resized height=.5\pgfphysicalheight,%
1044      center=\ifbool{HL@beamerswitch@align}{%
1045          \pgfpoint{.875\pgfphysicalwidth - 0.6\beamerswitch@margin}%
1046              {.75\pgfphysicalheight - 0.333\beamerswitch@margin}%
1047      }{%
1048          \pgfpoint{.875\pgfphysicalwidth}{.75\pgfphysicalheight}%
1049      }%
1050  }%
1051  \pgfpageslogicalpageoptions{5}
1052  {%
1053      border shrink=\pgfpageoptionborder,%
1054      border code=\beamerswitch@Border,%
1055      resized width=.25\pgfphysicalwidth,%
1056      resized height=.5\pgfphysicalheight,%
1057      center=\ifbool{HL@beamerswitch@align}{%
1058          \pgfpoint{.125\pgfphysicalwidth + 0.6\beamerswitch@margin}%
1059              {.25\pgfphysicalheight + 0.333\beamerswitch@margin}%
1060      }{%
1061          \pgfpoint{.125\pgfphysicalwidth}{.25\pgfphysicalheight}%
1062      }%
1063  }%
1064  \pgfpageslogicalpageoptions{6}
1065  {%
1066      border shrink=\pgfpageoptionborder,%
1067      border code=\beamerswitch@Border,%
1068      resized width=.25\pgfphysicalwidth,%

```



```

1069 resized height=.5\pgfphysicalheight,%
1070 center=\ifbool{HL@beamerswitch@align}{%
1071   \pgfpoint{.375\pgfphysicalwidth + 0.2\beamerswitch@margin}%
1072   {.25\pgfphysicalheight + 0.333\beamerswitch@margin}%
1073 }{%
1074   \pgfpoint{.375\pgfphysicalwidth}{.25\pgfphysicalheight}%
1075 }%
1076 }%
1077 \pgfpageslogicalpageoptions{7}
1078 {%
1079 border shrink=\pgfpageoptionborder,%
1080 border code=\beamerswitch@Border,%
1081 resized width=.25\pgfphysicalwidth,%
1082 resized height=.5\pgfphysicalheight,%
1083 center=\ifbool{HL@beamerswitch@align}{%
1084   \pgfpoint{.625\pgfphysicalwidth - 0.2\beamerswitch@margin}%
1085   {.25\pgfphysicalheight + 0.333\beamerswitch@margin}%
1086 }{%
1087   \pgfpoint{.625\pgfphysicalwidth}{.25\pgfphysicalheight}%
1088 }%
1089 }%
1090 \pgfpageslogicalpageoptions{8}
1091 {%
1092 border shrink=\pgfpageoptionborder,%
1093 border code=\beamerswitch@Border,%
1094 resized width=.25\pgfphysicalwidth,%
1095 resized height=.5\pgfphysicalheight,%
1096 center=\ifbool{HL@beamerswitch@align}{%
1097   \pgfpoint{.875\pgfphysicalwidth - 0.6\beamerswitch@margin}%
1098   {.25\pgfphysicalheight + 0.333\beamerswitch@margin}%
1099 }{%
1100   \pgfpoint{.875\pgfphysicalwidth}{.25\pgfphysicalheight}%
1101 }%
1102 }%
1103 \else
1104 % stack on top of one another
1105 \pgfpageslogicalpageoptions{1}
1106 {%
1107 border shrink=\pgfpageoptionborder,%
1108 border code=\beamerswitch@Border,%
1109 resized width=.5\pgfphysicalwidth,%
1110 resized height=.25\pgfphysicalheight,%
1111 center=\ifbool{HL@beamerswitch@align}{%
1112   \pgfpoint{.25\pgfphysicalwidth + 0.333\beamerswitch@margin}%
1113   {.875\pgfphysicalheight - 0.6\beamerswitch@margin}%
1114 }{%
1115   \pgfpoint{.25\pgfphysicalwidth}{.875\pgfphysicalheight}%
1116 }%
1117 }%
1118 \pgfpageslogicalpageoptions{2}
1119 {%
1120 border shrink=\pgfpageoptionborder,%
1121 border code=\beamerswitch@Border,%
1122 resized width=.5\pgfphysicalwidth,%
1123 resized height=.25\pgfphysicalheight,%
1124 center=\ifbool{HL@beamerswitch@align}{%

```

```

1125     \pgfpoint{.75\pgfphysicalwidth - 0.333\beamerswitch@margin}%
1126     {.875\pgfphysicalheight - 0.6\beamerswitch@margin}%
1127   }{%
1128     \pgfpoint{.75\pgfphysicalwidth}{.875\pgfphysicalheight}%
1129   }%
1130 }%
1131 \pgfpageslogicalpageoptions{3}
1132 {%
1133   border shrink=\pgfpageoptionborder,%
1134   border code=\beamerswitch@Border,%
1135   resized width=.5\pgfphysicalwidth,%
1136   resized height=.25\pgfphysicalheight,%
1137   center=\ifbool{HL@beamerswitch@align}{%
1138     \pgfpoint{.25\pgfphysicalwidth + 0.333\beamerswitch@margin}%
1139     {.625\pgfphysicalheight - 0.2\beamerswitch@margin}%
1140   }{%
1141     \pgfpoint{.25\pgfphysicalwidth}{.625\pgfphysicalheight}%
1142   }%
1143 }%
1144 \pgfpageslogicalpageoptions{4}
1145 {%
1146   border shrink=\pgfpageoptionborder,%
1147   border code=\beamerswitch@Border,%
1148   resized width=.5\pgfphysicalwidth,%
1149   resized height=.25\pgfphysicalheight,%
1150   center=\ifbool{HL@beamerswitch@align}{%
1151     \pgfpoint{.75\pgfphysicalwidth - 0.333\beamerswitch@margin}%
1152     {.625\pgfphysicalheight - 0.2\beamerswitch@margin}%
1153   }{%
1154     \pgfpoint{.75\pgfphysicalwidth}{.625\pgfphysicalheight}%
1155   }%
1156 }%
1157 \pgfpageslogicalpageoptions{5}
1158 {%
1159   border shrink=\pgfpageoptionborder,%
1160   border code=\beamerswitch@Border,%
1161   resized width=.5\pgfphysicalwidth,%
1162   resized height=.25 \pgfphysicalheight,%
1163   center=\ifbool{HL@beamerswitch@align}{%
1164     \pgfpoint{.25\pgfphysicalwidth + 0.333\beamerswitch@margin}%
1165     {.375\pgfphysicalheight + 0.2\beamerswitch@margin}%
1166   }{%
1167     \pgfpoint{.25\pgfphysicalwidth}{.375\pgfphysicalheight}%
1168   }%
1169 }%
1170 \pgfpageslogicalpageoptions{6}
1171 {%
1172   border shrink=\pgfpageoptionborder,%
1173   border code=\beamerswitch@Border,%
1174   resized width=.5\pgfphysicalwidth,%
1175   resized height=.25 \pgfphysicalheight,%
1176   center=\ifbool{HL@beamerswitch@align}{%
1177     \pgfpoint{.75\pgfphysicalwidth - 0.333\beamerswitch@margin}%
1178     {.375\pgfphysicalheight + 0.2\beamerswitch@margin}%
1179   }{%
1180     \pgfpoint{.75\pgfphysicalwidth}{.375\pgfphysicalheight}%

```

```

1181 }%
1182 }%
1183 \pgfpageslogicalpageoptions{7}
1184 {%
1185   border shrink=\pgfpageoptionborder,%
1186   border code=\beamerswitch@Border,%
1187   resized width=.5\pgfphysicalwidth,%
1188   resized height=.25 \pgfphysicalheight,%
1189   center=\ifbool{HL@beamerswitch@align}{%
1190     \pgfpoint{.25\pgfphysicalwidth + 0.333\beamerswitch@margin}%
1191     {.125\pgfphysicalheight + 0.6\beamerswitch@margin}%
1192   }{%
1193     \pgfpoint{.25\pgfphysicalwidth}{.125\pgfphysicalheight}%
1194   }%
1195 }%
1196 \pgfpageslogicalpageoptions{8}
1197 {%
1198   border shrink=\pgfpageoptionborder,%
1199   border code=\beamerswitch@Border,%
1200   resized width=.5\pgfphysicalwidth,%
1201   resized height=.25 \pgfphysicalheight,%
1202   center=\ifbool{HL@beamerswitch@align}{%
1203     \pgfpoint{.75\pgfphysicalwidth - 0.333\beamerswitch@margin}%
1204     {.125\pgfphysicalheight + 0.6\beamerswitch@margin}%
1205   }{%
1206     \pgfpoint{.75\pgfphysicalwidth}{.125\pgfphysicalheight}%
1207   }%
1208 }%
1209 \fi
1210 }
1211 }

```

9.7 Article layout

We provide some options for configuring the appearance of article mode.

The `maketitle` option triggers adjustments in how the title block is printed.

```

1212 \define@boolkey[AL]{beamerswitch}{maketitle}[true]{}

```

One will be to join the title and subtitle with a colon. There is an edge case where, if the user provides a title that ends in ‘!’ or ‘?’ *and* provides a subtitle while this option is in effect, they will end up with clashing punctuation in the middle of the displayed title (‘!.’ or ‘?:’). We therefore introduce a toggle that, if set true, suppresses the additional colon.

```

1213 \newtoggle{titlepunct}

```

Of course, we would rather not bother the user with this, so we introduce a command for testing the title for final punctuation.

The only way I can seem to do this is by switching to `expl3` syntax. Rather than introduce extra hard dependencies to cope with what will probably be quite a rare issue, we make the dependency soft: it will only be applied if `xparse` is available. If there is

demand for it, we could introduce a class option to switch this code on or off, but let's see how we go.

```

1214 \IfFileExists{xparse.sty}{\@tempwatrue}{\@tempwafalse}
1215 \if@tempswa
1216   \RequirePackage{xparse}
1217   \ExplSyntaxOn
1218   \NewDocumentCommand{\bsw@punct@test}{m}{\l_bsw_punct_test:n {#1}}
1219   \cs_new_protected:Nn \l_bsw_punct_test:n
1220   {
1221     \str_case:e:nnTF { \str_item:nn {#1} {-1} }
1222     {
1223       { , } { }
1224       { ; } { }
1225       { : } { }
1226       { . } { }
1227       { ! } { }
1228       { ? } { }
1229     }
1230     { \global\toggletrue{titlepunct} }
1231     { \global\togglefalse{titlepunct} }
1232   }
1233   \ExplSyntaxOff

```

We insert this test into the definitions for `\title` introduced by `beamer/beamerarticle`.

```

1234 \mode<article>{%
1235   \renewcommand{\title}[2][\beamer@origtitle{#2}\bsw@punct@test{#2}]
1236 }
1237 \mode<presentation>{%
1238   \long\def\beamer@title[#1]#2{%
1239     \def\inserttitle{#2}%
1240     \def\beamer@shorttitle{#1}%
1241     \bsw@punct@test{#2}%
1242   }
1243 }
1244 \else
1245   \wlog{Beamerswitch: Auto-detection of title punctuation not available.}
1246 \fi

```

We offer some alternatives for handling frame titles in article mode.

- `para` is what `beamerarticle` normally does.
- `margin` puts the frame titles in the margin.
- `none` gets rid of them entirely.

```

1247 \define@choicekey+[AL]{beamerswitch}{frametitles}{para, margin, none}{%
1248   \def\beamerswitch@articleframetitles{#1}%
1249 }{%
1250   \ClassWarning{beamerswitch}{Value of `frametitles' not recognized.
1251     Allowed values are para, margin, and none.}%
1252 }

```

We provide a command for setting these options.

```

1253 \newcommand{\articlayout}[1]{%
1254 \setkeys[AL]{beamerswitch}{#1}%

```

The following options are mode specific.

```

1255 \mode<article>{%

```

Personally I find slide titles somewhat intrusive in article mode. They can easily end up duplicating section headings in running text, or captions in figures. You may have other ideas, so we keep this behaviour configurable.

The `margin` value is implemented using `\marginpar`.

```

1256 \ifcsstring{beamerswitch@articleframetitles}{margin}{%
1257 \setbeamertemplate{frametitle}{%
1258 \marginpar[%
1259 \raggedleft\noindent\emshape\textbf{\insertframetitle}\par
1260 \noindent\insertframesubtitle\par
1261 ]{%
1262 \raggedright\noindent\emshape\textbf{\insertframetitle}\par
1263 \noindent\insertframesubtitle\par
1264 }%
1265 }
1266 }{%
1267 \ifcsstring{beamerswitch@articleframetitles}{none}{%
1268 \setbeamertemplate{frametitle}{}
1269 }{%
1270 \ifcsstring{beamerswitch@articleframetitles}{para}{%
1271 \setbeamertemplate{frametitle}[default]
1272 }{}%
1273 }%
1274 }

```

This is where we make our adjustments to `\maketitle`. We start by joining the subtitle to the title by means of a colon instead of a newline.

```

1275 \ifbool{AL@beamerswitch@maketitle}{%
1276 \renewcommand{\subtitle}[2][ ]{%
1277 \def\insertsubtitle{##2}\gappto@title{\iftoggle{titlepunct}{}{:} ##2}%
1278 }

```

We add support for printing the institute information.

```

1279 \ifundef{\beamer@originstitute}{%
1280 \renewcommand{\institute}[2][ ]{\def\insertinstitute{##2}}%
1281 }{%
1282 \renewcommand{\institute}[2][ ]{%
1283 \def\insertinstitute{##2}\beamer@originstitute{##2}}%
1284 }%

```

Our first change to `\maketitle` itself is to remove the initial vertical space.

```

1285 \def@maketitle{%
1286 \newpage

```

```

1287     \null
1288     \begin{center}%
1289         \let\footnote\thanks
1290         {\LARGE \@title \par}%
1291         \vskip 1.5em%
1292         {%
1293             \large\lineskip .5em%
1294             \begin{tabular}[t]{c}%
1295                 \@author
1296             \end{tabular}\par
1297         }%

```

The other is to add in a row for the institute information.

```

1298         \ifvoid{\insertinstitute}{%}{%
1299             {%
1300                 \normalsize\lineskip .5em%
1301                 \begin{tabular}[t]{c}%
1302                     \insertinstitute
1303                 \end{tabular}\par
1304             }%
1305         }%
1306         \vskip 1em%
1307         {\large \@date}%
1308     \end{center}%
1309     \par\vskip 1.5em%
1310 }%
1311 }{}%
1312 }%

```

For consistency, if the `maketitle` option has been passed, we change the PDF metadata in the other modes to use the colon convention for joining the title and subtitle.

```

1313 \mode<presentation>{%
1314     \ifbool{AL@beamerswitch@maketitle}{%
1315         \ifbool{beamer@autopdfinfo}{%
1316             \patchcmd{\beamer@firstminutepatches}{%
1317                 \inserttitle\ifx\insertsubtitle\@empty\else\ - \insertsubtitle\fi
1318             }{%
1319                 \inserttitle\ifx\insertsubtitle\@empty\else\iftoggle{titlepunct}{:}{:}
1320                 ↪ \insertsubtitle\fi
1321             }{}{}%
1322         }{}%
1323     }%
1324 }

```

There is no more.

```

1325 \endinput

```

Change History

| | | |
|--------|--|----|
| v1.1 | | |
| | <code>\articlelayout</code> : Remove personal customizations from <code>maketitle</code> code. | 37 |
| | General: Fix <code>maketitle</code> and <code>textinst</code> options. | 35 |
| | Improve documentation of <code>\BeamerSwitchSpawn</code> , <code>\handoutlayout</code> and <code>\articlelayout</code> | 5 |
| v1.2 | | |
| | General: Add ‘Quick start guide’ section. | 1 |
| v1.3 | | |
| | <code>\BeamerSwitchSpawn</code> : Decompose <code>\BeamerSwitchSpawn</code> into further configurable macros. | 12 |
| v1.4 | | |
| | General: Make margins around slides a configurable size | 15 |
| v1.5 | | |
| | <code>\beamerSwitch@Border</code> : Remove empty frames from end of handout. | 15 |
| v1.6 | | |
| | <code>\JobName</code> : Fix bug triggered by spaces in job names. | 12 |
| v1.6.1 | | |
| | <code>\bsw@punct@test</code> : Update <code>expl3</code> syntax | 35 |
| v1.7 | | |
| | General: Add <code>nup=1plus</code> option. | 14 |
| | Add <code>nup=1</code> option. | 14 |
| | Add ‘1 by 1 narrow’ layout. | 18 |
| | Add ‘1 by 1’ layout. | 18 |

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