Max Planck Institute
for Biogeochemistry

Beamer Blocks in the columns environment.

Department Biogeochemical Integration

Beamer blocks

Since our poster template uses the beamer class, we can influence the defaults for beamer blocks by the template. (for example the background and foreground colors, fonts and fontsize for content and header of this box) Which can help to avoid a lot of formatting in the user code andmakes it easier to achieve a standard layout. The interior is quite flexible.

- we add a pseudo picture

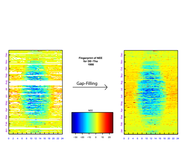

Figure 1: a pseudo caption

Vertical alignment hack

Beamer boxes can be used inside the columns environment, also provided by the beamer class. This simplifies some common vertical and horizontal alignment tasks. However there is one notable exception that requires a hack:

It is not possible to directly align beamer blocks vertically at the top AND the bottom of the poster simultaneously for the following reason. The block environment has no *height* parameter. The blocks grow with their content and the header. We can influence there size only indirectly by wrapping their content in minipages. The following code defines a minimal environment that allows to add extra white space to the blocks.

```
% vim:set ff=unix expandtab ts=2 sw=2:
\newenvironment{myMiniPage}[1][]{% define the height as an optoinal argument
          \begin{minipage}[c][#1][t]{\textwidth}%
}
{
    \end{minipage}%
}
\newenvironment{myBox}[2][]{ % define the height as an optoinal argument
  \begin{block}{
      \begin{minipage}[c][3cm]{\textwidth}%
      #2 % wrap the header in a minipage of fixed hight
      % This is a minimal solution.
      % We will see later that this can be done in a smarter way.
      \end{minipage}%
    }
    \begin{myMiniPage}[#1]
}
{
    \end{myMiniPage}%
  \end{block}
}
```

With control over the vertical extent established, we can choose the size of the first box in a column and then use LaTeX2e s built in computing facilities (`\dimexpr` and `\numexpr`) to determine the size of the second box.

```
% vim:set ff=unix expandtab ts=2 sw=2:
%% now we set some lengths to organize our boxes in columns
%% for both columns
\newlength{\vblocksep}
\setlength{\vblocksep}{1cm}
\newlength{\hblocksep}
\setlength{\hblocksep}{1cm}

%overall height of columns (fixme: this should ideally be set in the template)
\newlength{\hcols}
\setlength{\hcols}{76cm}
 %overall width of our columns
\newlength{\wcols}
\setlength{\wcols}{\dimexpr \textwidth-\hblocksep * 3  \relax}
%% column specific
%% colA
\newlength{\wcolA}
% set the widht of the first column manually
\setlength{\wcolA}{.5\wcols}
\newlength{\hboxOneA}
% set the height of the first box manually
\setlength{\hboxOneA}{13cm}
\newlength{\hboxTwoA}
% compute the height of the second box
\setlength{\hboxTwoA}{ \dimexpr ( \hcols - \hboxOneA) \relax}
```

Measured block

For this block we used the `\savebox{}` and command `\usebox{}` commands to measure the vertical extend of the box before it is drawn inaddition to the technique used for the first column. As a result this box grows with its content and the second box increases to fill the colum vertically. The remaining code:

```
% vim:set ff=unix expandtab ts=2 sw=2:
%\begin{columns}[t,totalwidth=\wcols] % use for debugging
\begin{columns}[t]
  \begin{column}[t]{\wcolA}
    %% now draw the actual boxes
    % columnA
    %\begin{myBox}[\hboxOneA]{Beamer blocks}
    \begin{myBox}[\hboxOneA]{Beamer blocks}
      \input{content/1a}
    \end{myBox}
    \vspace{\vblocksep}
    \begin{myBox}[\hboxTwoA]{Vertical alignment hack}
      \input{content/2a}
    \end{myBox}

  \end{column}

  %% column specific
  %% colB
  % compute the width of the second column
  \newlength{\wcolB}
  \setlength{\wcolB}{\dimexpr \wcols-\wcolA \relax}

    \begin{column}[t]{\wcolB}
    \newlength{\hboxOneB}
    % This time we even go a step further and measure
    % the contents of the first box before we draw it
     \newsavebox\myMeasuringBox
      \savebox{\myMeasuringBox}{
      \begin{myMiniPage}%
        \input{content/1b}
      \end{myMiniPage}%
    }
      \setlength{\hboxOneB}{\ht\myMeasuringBox}% height (above baseline)
      \addtolength{\hboxOneB}{\dp\myMeasuringBox}% and depth (below baseline) of the box

    % compute the height of the second box
    \newlength{\hboxTwoB}
    \setlength{\hboxTwoB}{ \dimexpr ( \hcols - \hboxOneB) \relax}

    \begin{myBox}[\hboxOneB]{Measured block}
      \usebox{\myMeasuringBox}
    \end{myBox}
    \vspace{\vblocksep}
    \begin{myBox}[\hboxTwoB]{Conclusions}
      \input{content/2b}
    \end{myBox}
  \end{column}
\end{columns}
```

Conclusions

- The built in environments of the beamer class (`columns` and `block`) do not facilitate a sensible automation of vertical alignment of the boxes. If the columns are for instance aligned at the top the lowest boxes of different columns will end at different vertical positions.
- Basic functionality can be achieved by the presented approach of inflating the blocks with internal minipages.
- The above code could be generelized in different ways:
  - More columns and rows, different distribution of whitespace.
  - Instead of enforcing a fixed vertical size of the header, the actual size could be measured and substracted from the parameter governing the size of the internal miniapage. The parameter could then be interpreted as an outer vertical size, which is more intuitive.
- Arbitrary positioning of boxes is not feasable.
- Code achieving this level of generalty would better live in a package.
- Given the limitations and the complexity of the required workarounds we do not recommend the combination of `columns` and `block` environments as general approach to posters. The value of this example rather consists in the demonstration of the most basic approach to the alignment challenge, and its minimal dependencies on other packages.
- The approach should certainly not be mandatory for the use of a template. Such a template should allow the use of other approaches implemented by additional packages. We will present such packages in the following poster examples.

Get me out, I do not
belong here....