The flushend package

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1 Introduction

The package is used to balance columns on any page in twocolumn mode. By default it is switched on at the end of document. It is expected to work with leftcolumn footnotes (option checkfootnote) and rightcolumn top floats (option checkfloat).

To compare with the previous version the package is completely rewritten with new balancing algorithm and new options, removed dependency on other packages.

2 Usage

Just load the package to balance the last page: that's all. To balance some page in middle of document use command `\flushcolsend` at that page.

Available commands:

`\flushend` This macro switches on column balancing on the last page. It is used by default.

`\raggedend` This macro switches off column balancing on the last page.

`\flushcolsend` This macro switches on column balancing on the current page.

`\raggedcolsend` This macro switches off column balancing on the current page.

`\atColsBreak`⟨***tokens***⟩ Adds ⟨*tokens*⟩ in place of the original column break (made without balancing).

Example: `\atColsBreak{\vskip-2pt}`

`\atColsEnd`⟨***tokens***⟩ Adds ⟨*tokens*⟩ at the end of right column.

`\showcolsendrule` It can be used just for debugging: adds rule to the bottom of columns.

2.1 Package options

⟨`spread`⟩ `[default]` It enables columns spreading trying to balance.

⟨`nospread`⟩ It disables columns spreading trying to balance.

⟨`shrink`⟩ `[default]` It enables columns shrinking trying to balance.

⟨noshrink⟩ It disables columns shrinking trying to balance.

Similiar options exist for single column separatly:

`lspread`, `nolspread`, `lshrink`, `nolshrink` – for left column

`rspread`, `norspread`, `rshrink`, `norshrink` – for right column

⟨checkfootnote⟩ `[default]` Adds guess and checking for possible footnote on left column.

⟨nocheckfootnote⟩ Skips guess for possible footnote and ignores any existing one.

⟨checkfloat⟩ Adds guess for top float on right column. Any box with height bigger then 5`\topskip` is considered as float. There are no user interface to change this limit except internal macro definition: `\gdef\top@@floatbox@min@default{5\topskip}`

As guess is too brutal, not accurate, and somehow dangerous in case for text misplacement it is switched off by default.

⟨nocheckfloat⟩ `[default]` Skips guess for top float on right column.

⟨debug⟩ Adds rules to the bottom of columns (just for debugging) and leftcolumn break place. Adds some additional log info.

⟨nodebug⟩ `[default]` Skips putting debuging lines and additional info.

3 Implementation

Improved balancing (at least it is expected so) is based on using possible spread and shrink in both columns checking constructed columns badness. Hard coded limit for badness is `101`. Available only as internal macro: `\def\flushend@@column@badness{101}`. `\pagediscards` material dimensions are used to restore original vertical skip at original columns break.

Expected usecase `(with options [checkfootnote,checkfloat])`:

