wrapstuff 宏包

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2022/08/05　　v0.3*

第 1 节　基本用法

wrapstuff 宏包提供了图文绕排的另一种实现。wrapstuff 尝试整合和扩展 picinpar、floatflt、wrapfig、cutwin 和 wrapfig2 等同类宏包的功能。本宏包兼容 caption、float 和 floatrow 等宏包，并试图兼容显示（display）数学公式和各种 LaTeX 列表环境，可以让他们正确绕排。

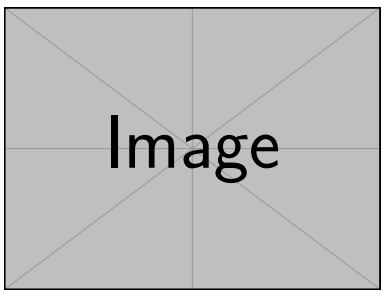
wrapstuff 的实现依赖 LaTeX 2021-06-01 开始提供的段落钩子，并依赖 LaTeX3 2022-04-10 之后的版本。

wrapstuff
```
\begin{wrapstuff}[⟨选项⟩]
⟨绕排内容⟩
\end{wrapstuff}
⟨正文⟩
```

wrapstuff 只提供了一个用户环境 `wrapstuff`，会在环境之后的段落开始绕排。例如

```
\begin{wrapstuff}[c,top=1]
  \includegraphics[width=\dimeval{\linewidth/3}]{example-image.pdf}
\end{wrapstuff}
\zhlipsum[1][name=zhufu]
```

旧历的年底毕竟最像年底，村镇上不必说，就在天空中也显出将到新年的气象来。灰白色的沉重的晚云中间时时发出闪光，接着一声钝响，是送灶的爆竹；近处燃放的可就更强烈了，震耳的大音还没有息，空气里已经散满了幽微的火药香。我是正在这一夜回到我的故乡鲁镇的。虽说故乡，然而已没有家，所以只得暂寓在



鲁四老爷的宅子里。他是我的本家，比我长一辈，应该称之曰“四叔”，是一个讲理学的老监生。他比先前并没有甚么大改变，单是老了些，但也还未留胡子，一见面是寒暄，寒暄之后说我“胖了”，说我“胖了”之后即大骂其新党。但我知道，这并非借题在骂我：因为他所骂的还是康有为。但是，谈话是总不投机的了，于是不多久，我便一个人剩在书房里。

\wrapstuffset
```
\wrapstuffset {⟨选项列表⟩}
```

wrapstuff 的选项可以在调用宏包时设置，也可以通过 `\wrapstuffset` 设置。选项将在下面描述。

top ⟨n⟩
```
top = ⟨非负整数⟩
```

设置在正文段落的第几行之后开始绕排，可以设置为非负整数。非负整数选项 ⟨n⟩ 是设置选项 `top` 为 ⟨n⟩ 的缩写形式。初始值是 0。

*rev. 3be38c0.

width　width = ⟨宽度⟩

设置绕排内容的宽度，初始值为 0 pt，代表自然宽度。此时，wrapstuff 环境内的内容只能有一行，不能使用 \\ 换行或者 \par 分段。如果需要在环境内换行或者分段，就需要将 width 设置成合适的宽度。

height　height = ⟨高度⟩

设置绕排内容的高度，初始值为 0 pt，代表自然高度。

lines　lines = ⟨正整数⟩

设置绕排内容占据正文的行数，可以设置正整数。初始值为空，根据绕排内容的高度自动计算行数。

linewidth　linewidth = ⟨宽度⟩

设置正文段落的行宽，初始设置为 \linewidth，一般不需要调整。

l　l/r/c/i/o
r　ratio = ⟨实数⟩
c
i
o
ratio

这些选项用于设置绕排内容位于正文中的位置。选项 l/r/c/i/o 分别设置绕排内容位于正文的左侧、右侧、中间、内侧、外侧。选项 ratio 设置绕排内容左侧的正文占据行宽的比例，可以设置为 [0,1] 区间中的合理实数。选项 i/o 可以与 ratio 一起使用，这时设置的是内/外侧正文的行宽比例。初始设置为 r，即位于正文的右侧。

column　column = ⟨**true**|*false*|*par*⟩

控制是否将绕排内容两侧的正文分栏显示，只有设置 c 选项或者设置 ratio 不等于 0 或者 1 时才有效。false 表示不分栏，正文文字方向始终保持从左到右的顺序；par 表示以段落为单位进行分栏，如下示例。

天地玄黄宇宙洪荒日月盈昃辰宿列张寒来暑往
秋收冬藏闰馀成岁　A　云腾致雨露结为霜
律召调阳　金生丽水玉出昆冈
天地玄黄宇宙洪荒日月盈昃辰宿列张寒来暑往
秋收冬藏闰馀成岁　B　律召调阳
云腾致雨露结为霜　金生丽水玉出昆冈
天地玄黄宇宙洪荒　C　日月盈昃辰宿列张
寒来暑往秋收冬藏　闰馀成岁律召调阳
云腾致雨露结为霜金生丽水玉出昆冈

```
\begin{wrapstuff}[c,1]
  \IMAGE{2em}{a}
\end{wrapstuff}
\QIANZIWEN
\begin{wrapstuff}[c,1,column=par]
  \IMAGE{2em}{b}
\end{wrapstuff}
\QIANZIWEN
\begin{wrapstuff}[c,0,column=false]
  \IMAGE{2em}{c}
\end{wrapstuff}
\QIANZIWEN
```

leftsep　leftsep = ⟨长度⟩
rightsep　rightsep = ⟨长度⟩
hsep　hsep = ⟨长度⟩

设置绕排内容与正文的左/右间距，选项 hsep 同时设置 leftsep 和 rightsep。初始值是 1 em。

abovesep　abovesep = ⟨长度⟩
belowsep　belowsep = ⟨长度⟩
vsep　vsep = ⟨长度⟩

设置绕排内容与正文的上/下间距，选项 vsep 同时设置 abovesep 和 belowsep。初始值是 0 pt。

hoffset　hoffset = ⟨长度⟩

设置绕排内容伸出正文版心的长度。当设置了选项 c 或者选项 ratio 的值位于 (0,1) 时，本选项无效。一个特殊值 \width 用于表示绕排内容和相应间距的总宽度，可以将 hoffset 设置为 \width，完全伸出版心。初始值为 0 pt。

voffset　voffset = ⟨长度⟩

用于调整绕排内容的竖直位置，初始值为 0 pt。

type　type = ⟨浮动体类型⟩

设置绕排内容的浮动体类型，初始值为空。如果需要在 wrapstuff 环境中使用 \caption 命令，则需要设置 type 为 figure 或 table 等类型，并需要同时设置 width 指定宽度。

天地玄黄宇宙洪荒日月盈昃
辰宿列张寒来暑往秋收冬藏
闰馀成岁律召调阳
云腾致雨露结为霜金生丽水
玉出昆冈

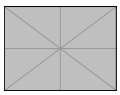


图 1　示例

```
\begin{wrapstuff}[type=figure,width=5em]
  \centering
  \IMAGE{4em}{plain}
  \caption{示例}
\end{wrapstuff}
\QIANZIWEN
```

\wrapstuffclear　如果当前正文段落的行数不够，wrapstuff 的作用会延续到下一段。这可能会导致某些意外结果，可以在下一段之前启用命令 \wrapstuffclear 消除影响。

第 2 节　代码实现

```
1 ⟨*package⟩
2 ⟨@@=wstf⟩
```

wrapstuff 的实现依赖 LaTeX 2021-06-01 开始提供的段落钩子。

```
3 \@ifl@t@r \fmtversion { 2021-06-01 }
4   { }
5   {
6     \msg_new:nnn { wrapstuff } { latex-too-old }
7       {
8         You~need~to~update~your~LaTeX~to~the~latest~release. \\
9         Loading~wrapstuff~will~abort!
10      }
11    \msg_critical:nn { wrapstuff } { latex-too-old }
12  }
```

由于使用了 \keys_precompile:nnN，需要比较新的 LaTeX3。

```
13 \@ifl@t@r \ExplLoaderFileDate { 2022-04-10 }
14   { }
15   {
16     \msg_new:nnn { wrapstuff } { latex3-too-old }
17       {
18         You~need~to~update~your~installation~of~the~bundles~
19         "l3kernel"~and~"l3packages". \\
20         Loading~wrapstuff~will~abort!
21       }
22     \msg_critical:nn { wrapstuff } { latex3-too-old }
23   }
24 \prop_gput:Nnn \g_msg_module_name_prop { wstf } { wrapstuff }
```

\c__wstf_global_tl_tl
\c__wstf_global_dim_tl
\c__wstf_global_int_tl
\c__wstf_global_bool_tl

一些需要全局设置的变量。

```
25 \tl_const:Nn \c__wstf_global_tl_tl
26   { \g__wstf_main_setting_tl }
27 \tl_const:Nn \c__wstf_global_dim_tl
28   {
29     \g__wstf_hang_ht_dim
30     \g__wstf_total_ht_dim
31     \g__wstf_stuff_ht_dim
32     \g__wstf_stuff_wd_dim
33     \g__wstf_first_dp_dim
34     \g__wstf_first_sep_dim
35     \g__wstf_prevdepth_dim
36     \g__wstf_column_ht_dim
```

```
    \g__wstf_window_ht_dim
    \g__wstf_remaining_dim
    \g__wstf_column_room_dim
    \g__wstf_parshape_indent_dim
    \g__wstf_parshape_length_dim
  }
\tl_const:Nn \c__wstf_global_int_tl
  {
    \g__wstf_top_int
    \g__wstf_column_int
    \g__wstf_window_int
  }
\tl_const:Nn \c__wstf_global_bool_tl
  {
    \g__wstf_next_bool
    \g__wstf_leqno_bool
    \g__wstf_column_bool
    \g__wstf_entire_bool
    \g__wstf_display_bool
    \g__wstf_move_hang_bool
    \g__wstf_next_hang_bool
    \g__wstf_first_set_bool
    \g__wstf_first_save_bool
    \g__wstf_right_move_bool
  }
```

__wstf_tl_init:N
__wstf_dim_init:N
__wstf_int_init:N
__wstf_bool_init:N

全局变量的初始化，注意保存好清除和恢复的设置。

```
\cs_new_protected:Npn \__wstf_tl_init:N #1
  {
    \tl_new:N #1
    \tl_gput_right:Nn \g__wstf_var_clear_tl
      { \tl_gclear:N #1 }
    \tl_gput_right:Nn \g__wstf_var_push_tl
      { \tl_gset:Nn \exp_not:N #1 { \exp_not:o {#1} } }
  }
\cs_new_protected:Npn \__wstf_dim_init:N #1
  {
    \dim_new:N #1
    \tl_gput_right:Nn \g__wstf_var_clear_tl
      { \dim_gzero:N #1 }
    \tl_gput_right:Nn \g__wstf_var_push_tl
      { \dim_gset:Nn #1 { \dim_use:N #1 } }
  }
\cs_new_protected:Npn \__wstf_int_init:N #1
  {
    \int_new:N #1
    \tl_gput_right:Nn \g__wstf_var_clear_tl
      { \int_gzero:N #1 }
    \tl_gput_right:Nn \g__wstf_var_push_tl
      { \int_gset:Nn #1 { \int_use:N #1 } }
  }
\cs_new_protected:Npn \__wstf_bool_init:N #1
  {
    \bool_new:N #1
    \tl_gput_right:Nn \g__wstf_var_clear_tl
      { \bool_gset_false:N #1 }
    \tl_gput_right:Nn \g__wstf_var_push_tl
      {
        \bool_if:NTF #1
          { \bool_gset_true:N  #1 }
          { \bool_gset_false:N #1 }
      }
  }
\tl_new:N \g__wstf_var_clear_tl
\tl_new:N \g__wstf_var_push_tl
\tl_map_function:NN \c__wstf_global_tl_tl   \__wstf_tl_init:N
\tl_map_function:NN \c__wstf_global_dim_tl  \__wstf_dim_init:N
```

```
\tl_map_function:NN \c__wstf_global_int_tl  \__wstf_int_init:N
\tl_map_function:NN \c__wstf_global_bool_tl \__wstf_bool_init:N
```

\g__wstf_top_int 的初始值是 −1。

```
\int_gdecr:N \g__wstf_top_int
\tl_gput_right:Nn \g__wstf_var_clear_tl
  { \int_gdecr:N \g__wstf_top_int }
```

__wstf_clear:
__wstf_clear_variable:
__wstf_clear_kludge:
__wstf_clear_stuff_box:

```
\cs_new_protected_nopar:Npn \__wstf_clear:
  {
    \__wstf_clear_para_hook:
    \__wstf_clear_kludge:
    \__wstf_clear_variable:
  }
\cs_new_protected_nopar:Npn \__wstf_clear_variable:
  {
    \tl_use:N \g__wstf_var_clear_tl
    \box_gclear:N \g__wstf_stuff_box
  }
\cs_new_protected_nopar:Npn \__wstf_clear_kludge:
  {
    \bool_if:NTF \g__wstf_next_bool
      {
        \skip_vertical:n
          { \tex_baselineskip:D * \g__wstf_window_int }
      }
      {
        \box_if_empty:NF \g__wstf_stuff_box
          { \__wstf_clear_stuff_box: }
      }
  }
\cs_new_protected_nopar:Npn \__wstf_clear_stuff_box:
  {
    \__wstf_ignore_depth:
    \skip_set:Nn \l__wstf_last_skip
      { \box_dp:N \strutbox }
    \skip_vertical:N \l__wstf_last_skip
    \box_use_drop:N \g__wstf_stuff_box
    \skip_vertical:N \l__wstf_last_skip
    \__wstf_ignore_depth:
  }
```

__wstf_status_push:
__wstf_status_pop:
__wstf_status_restore:
__wstf_status_clear:

全局变量的保存与恢复。

```
\cs_new_protected_nopar:Npn \__wstf_status_push:
  {
    \tl_clear:N \l__wstf_status_tl
    \int_gincr:N \g__wstf_status_int
    \exp_args:Ne \__wstf_status_push_aux:n
      { \int_use:N \g__wstf_status_int }
    \seq_gpush:No \g__wstf_status_seq { \l__wstf_status_tl }
  }
\cs_new_protected:Npn \__wstf_status_push_aux:n #1
  {
    \__wstf_push_cs:nN {#1} \__wstf_para_before:
    \__wstf_push_cs:nN {#1} \__wstf_para_begin:
    \__wstf_push_cs:nN {#1} \__wstf_para_end:
    \__wstf_push_cs:nN {#1} \__wstf_display_hook:
    \__wstf_push_box:N \g__wstf_stuff_box
    \__wstf_push_var:
  }
\cs_new_protected:Npn \__wstf_push_cs:nN #1#2
  {
    \exp_args:NNc \__wstf_push_cs_aux:NN #2
      { __wstf_ #1 _ \token_to_str:N #2 }
  }
\cs_new_protected:Npn \__wstf_push_cs_aux:NN #1#2
```

```
  {
    \cs_gset_eq:NN #2#1
    \tl_put_right:Nn \l__wstf_status_tl
      {
        \cs_gset_eq:NN #1#2
        \cs_undefine:N #2
      }
  }
\cs_new_protected:Npn \__wstf_push_box:N #1
  {
    \hbox_gset:Nn \g__wstf_stauts_box
      {
        \hbox_unpack_drop:N \g__wstf_stauts_box
        \box_use:N #1
      }
    \tl_put_right:Nn \l__wstf_status_tl
      { \__wstf_pop_box:N #1 }
  }
\cs_new_protected:Npn \__wstf_pop_box:N #1
  {
    \hbox_gset:Nw \g__wstf_stauts_box
      \hbox_unpack_drop:N \g__wstf_stauts_box
      \box_gset_to_last:N #1
    \__wstf_if_last_hlist:TF
      { \hbox_gset_end: }
      {
        \hbox_gset_end:
        \box_gclear:N \g__wstf_stauts_box
      }
  }
\cs_new_protected_nopar:Npn \__wstf_push_var:
  {
    \tl_put_right:Nx \l__wstf_status_tl
      { \g__wstf_var_push_tl }
  }
\cs_new_protected_nopar:Npn \__wstf_status_pop:
  {
    \seq_gpop:NNT \g__wstf_status_seq \l__wstf_status_tl
      {
        \int_gdecr:N \g__wstf_status_int
        \tl_use:N \l__wstf_status_tl
      }
  }
\cs_new_protected_nopar:Npn \__wstf_status_restore:
  {
    \__wstf_status_push:
    \__wstf_clear_para_hook:
    \__wstf_clear_display_hook:
    \__wstf_clear_variable:
    \group_insert_after:N \__wstf_status_pop:
  }
\cs_new_protected_nopar:Npn \__wstf_status_clear:
  {
    \bool_if:NT \g__wstf_next_bool
      {
        \__wstf_clear_para_hook:
        \__wstf_clear_variable:
      }
  }
\tl_new:N \l__wstf_status_tl
\box_new:N \g__wstf_stauts_box
\int_new:N \g__wstf_status_int
\seq_new:N \g__wstf_status_seq
```

\wrapstuff@parboxrestore
\@arrayparboxrestore

在 LaTeX 的 \parbox 和 minipage 等环境中恢复正常的段落状态。\wrapstuff@parboxrestore 的初始值是在分组后清除活动的段落钩子和相关全局变量，只有在 wrapstuff@par 环境内部

才等于 __wstf_status_restore:，保存和恢复相关状态。

```
\cs_new_protected_nopar:Npn \wrapstuff@parboxrestore
  { \group_insert_after:N \__wstf_status_clear: }
\cs_new_protected_nopar:Npn \__wstf_parbox_restore:
  {
    \cs_set_eq:NN
      \wrapstuff@parboxrestore
      \__wstf_status_restore:
  }
\g@addto@macro \@arrayparboxrestore
  { \wrapstuff@parboxrestore }
```

__wstf_if_last_none:*TF*
__wstf_if_last_hlist:*TF*
__wstf_if_last_whatsit:*TF*
__wstf_if_last_glue:*TF*
__wstf_if_last_kern:*TF*
__wstf_if_last_penalty:*TF*

一些 ε-TEX 结点判定函数。

```
\group_begin:
\cs_set:Npn \__wstf_tmp:nn #1
  {
    \exp_args:Ncc \__wstf_tmp_aux:NNn
      { __wstf_if_last_ #1 : }
      { c__wstf_ #1 _node }
  }
\cs_set:Npn \__wstf_tmp_aux:NNn #1#2#3
  {
    \int_const:Nn #2 {#3}
    \prg_new_conditional:Npnn #1 { T , F , TF }
      {
        \if_int_compare:w \tex_lastnodetype:D = #2
          \prg_return_true: \else: \prg_return_false: \fi:
      }
  }
\__wstf_tmp:nn { none }    { -1 }
\__wstf_tmp:nn { hlist }   {  1 }
\__wstf_tmp:nn { whatsit } {  9 }
\__wstf_tmp:nn { glue }    { 11 }
\__wstf_tmp:nn { kern }    { 12 }
\__wstf_tmp:nn { penalty } { 13 }
\group_end:
```

__wstf_gadd_hook:nn
__wstf_package_hook:nn

```
\cs_new_protected:Npn \__wstf_gadd_hook:nn #1
  { \hook_gput_code:nnn {#1} { wrapstuff } }
\cs_new_protected:Npn \__wstf_package_hook:nn #1
  { \hook_gput_code:nnn { package/#1/after } { wrapstuff } }
```

__wstf_para_raw_end:

将 \para_raw_end: 放在分组中是为了保持 \parshape。

```
\cs_new_protected_nopar:Npn \__wstf_para_raw_end:
  { \group_begin: \para_raw_end: \group_end: }
```

__wstf_gadd_ht:Nn

```
\cs_new_protected:Npn \__wstf_gadd_ht:Nn #1#2
  { \box_gset_ht:Nn #1 { \box_ht:N #1 + \dim_eval:n {#2} } }
```

wrapstuff

主要功能环境接口。

```
\NewDocumentEnvironment { wrapstuff } { O { } }
  {
    \__wstf_clear:
    \int_set:Nn \l__wstf_top_int { -1 }
    \tl_if_blank:nTF {#1}
      { \tl_clear:N \l__wstf_main_kv_tl }
      {
        \keys_set_filter:nnnN { wrapstuff }
          { main , ratio }
          {#1} \l__wstf_main_kv_tl
      }
    \tl_set:Nx \l__wstf_type_tl { \l__wstf_type_tl }
    \dim_set:Nn \l__wstf_width_dim { \l__wstf_width_tl }
    \dim_set:Nn \l__wstf_height_dim { \l__wstf_height_tl }
    \hbox_gset:Nw \g__wstf_stuff_box
```

```
      \dim_compare:nNnTF \l__wstf_width_dim > \c_zero_dim
        { \__wstf_minipage_begin: }
        { \__wstf_hbox_begin: }
  }
  {
    \dim_compare:nNnTF \l__wstf_width_dim > \c_zero_dim
      { \__wstf_minipage_end: }
      { \__wstf_hbox_end: }
    \__wstf_set_vsep:
    \__wstf_attach_label:
    \tl_if_empty:NTF \l__wstf_main_kv_tl
      { \tl_gclear:N \g__wstf_main_setting_tl }
      { \__wstf_save_main_setting: }
    \__wstf_set_top_line:
    \dim_gset:Nn \g__wstf_stuff_wd_dim
      { \box_wd:N \g__wstf_stuff_box }
    \dim_gset:Nn \g__wstf_stuff_ht_dim
      { \box_ht_plus_dp:N \g__wstf_stuff_box }
    \dim_gset_eq:NN
      \g__wstf_remaining_dim
      \g__wstf_stuff_ht_dim
    \__wstf_next_para:
  }
\__wstf_gadd_hook:nn { env/wrapstuff/before } { \par }
\cs_new_protected_nopar:Npn \__wstf_minipage_begin:
  {
    \__wstf_floatrow_hook:
    \dim_compare:nNnTF \l__wstf_height_dim > \c_zero_dim
      { \begin { minipage } [b] [ \l__wstf_height_dim ] [c] { \l__wstf_width_dim } }
      { \begin { minipage } [b] { \l__wstf_width_dim } }
    \tl_if_empty:NF \l__wstf_type_tl
      { \__wstf_set_float: }
  }
\cs_new_protected_nopar:Npn \__wstf_minipage_end:
  {
      \end { minipage }
    \hbox_gset_end:
    \__wstf_float_pos_hook:
  }
\cs_new_protected_nopar:Npn \__wstf_hbox_begin:
  { \tex_ignorespaces:D }
\cs_new_protected_nopar:Npn \__wstf_hbox_end:
  {
      \tex_unskip:D
    \hbox_gset_end:
    \dim_compare:nNnT \l__wstf_height_dim > \c_zero_dim
      { \__wstf_gset_height: }
  }
\cs_new_protected_nopar:Npn \__wstf_gset_height:
  {
    \hbox_gset:Nn \g__wstf_stuff_box
      {
        \box_move_up:nn
          {
            (   \l__wstf_height_dim
              - \box_ht:N \g__wstf_stuff_box
              + \box_dp:N \g__wstf_stuff_box
            ) / 2
          }
          { \box_use_drop:N \g__wstf_stuff_box }
      }
    \box_gset_ht:Nn \g__wstf_stuff_box { \l__wstf_height_dim }
    \box_gset_dp:Nn \g__wstf_stuff_box { \c_zero_dim }
  }
\cs_new_protected_nopar:Npn \__wstf_set_vsep:
  {
    \__wstf_gadd_ht:Nn \g__wstf_stuff_box { \l__wstf_abovesep_tl }
```

```
    \dim_set:Nn \l__wstf_shift_dim { \l__wstf_belowsep_tl }
    \dim_compare:nNnF \l__wstf_shift_dim = \c_zero_dim
      { \__wstf_set_belowsep: }
  }
\cs_new_protected_nopar:Npn \__wstf_set_belowsep:
  {
    \hbox_gset:Nn \g__wstf_stuff_box
      {
        \box_move_up:nn
          { \l__wstf_shift_dim + \box_dp:N \g__wstf_stuff_box }
          { \box_use_drop:N \g__wstf_stuff_box }
      }
    \box_gset_dp:Nn \g__wstf_stuff_box { \c_zero_dim }
  }
\tl_new:N \l__wstf_main_kv_tl
\box_new:N \g__wstf_stuff_box
\dim_new:N \l__wstf_shift_dim
\dim_new:N \l__wstf_width_dim
\dim_new:N \l__wstf_height_dim

\cs_new_protected_nopar:Npn \__wstf_attach_label:
  {
    \stepcounter { wrapstuff }
    \hbox_gset:Nn \g__wstf_stuff_box
      {
        \__wstf_write_label:
        \box_use_drop:N \g__wstf_stuff_box
      }
  }
\cs_new_protected_nopar:Npn \__wstf_write_label:
  {
    \exp_args:Nee \__wstf_write_label_aux:nn
      { \__wstf_counter:n { wrapstuff } }
      { \__wstf_counter:n { page } }
  }
\cs_new_protected:Npx \__wstf_write_label_aux:nn #1#2
  {
    \prop_gput_if_new:Nnn \exp_not:N \g__wstf_page_prop {#1} {#2}
    \iow_shipout_x:Nn \exp_not:N \@auxout
      {
        \c_backslash_str wrapstuff@label
          {#1}
          { \exp_not:N \wrapstuff@counter { page } }
      }
  }
\newcounter { wrapstuff }
\cs_new:Npn \__wstf_counter:n #1
  { \int_value:w \value {#1} }
\cs_new_eq:NN \wrapstuff@counter \__wstf_counter:n
\cs_new_protected_nopar:Npn \wrapstuff@label
  { \prop_gput:Nnn \g__wstf_page_prop }
\__wstf_gadd_hook:nn { begindocument }
  {
    \legacy_if:nTF { @filesw }
      {
        \iow_now:Nx \@mainaux
          {
            \c_backslash_str providecommand
            \c_backslash_str wrapstuff@label [2] { }
          }
      }
      { \cs_gset_eq:NN \__wstf_write_label: \__wstf_empty: }
  }
\__wstf_gadd_hook:nn { enddocument/afterlastpage }
  {
    \legacy_if:nT { @filesw }
      { \prop_gclear:N \g__wstf_page_prop }
```

__wstf_attach_label:
__wstf_write_label:
__wstf_rerun_check:

```
  }
\__wstf_gadd_hook:nn { enddocument/info }
  {
    \prop_if_empty:NF \g__wstf_rerun_prop
      { \__wstf_rerun_check: }
  }
\cs_new_protected_nopar:Npn \__wstf_rerun_check:
  {
    \prop_map_inline:Nn \g__wstf_rerun_prop
      {
        \prop_get:NnN \g__wstf_page_prop { ##1 } \l__wstf_page_tl
        \int_if_even:nF { \l__wstf_page_tl - ##2 }
          { \prop_map_break:n { \__wstf_rerun_warning: } }
      }
  }
\cs_new_protected_nopar:Npn \__wstf_rerun_warning:
  { \msg_warning:nn { wstf } { rerun-required } }
\msg_new:nnn { wstf } { rerun-required }
  {
    Page(s)~may~have~changed.\\
    Rerun~to~get~i/o~setting~right.
  }
\tl_new:N \l__wstf_page_tl
\prop_new:N \g__wstf_page_prop
\prop_new:N \g__wstf_rerun_prop
\__wstf_save_main_setting:
\cs_new_protected_nopar:Npn \__wstf_save_main_setting:
  {
    \exp_args:Nnno
    \keys_set_filter:nnnN { wrapstuff }
      { main }
      { \l__wstf_main_kv_tl } \l__wstf_main_kv_tl
    \bool_if:NTF \l__wstf_swap_bool
      { \__wstf_swap_ratio: }
      { \__wstf_set_ratio:N \l__wstf_ratio_fp }
    \tl_if_empty:NF \l__wstf_main_kv_tl
      { \__wstf_save_main_setting_aux: }
  }
\cs_new_protected:Npn \__wstf_set_ratio:N #1
  {
    \tl_gset:Nx \g__wstf_main_setting_tl
      { \fp_set:Nn \exp_not:N \l__wstf_ratio_fp { \fp_use:N #1 } }
  }
\cs_new_protected:Npn \__wstf_set_ratio:n #1
  {
    \tl_gset:Nx \g__wstf_main_setting_tl
      { \fp_set:Nn \exp_not:N \l__wstf_ratio_fp { \fp_eval:n {#1} } }
  }
\cs_new_protected_nopar:Npn \__wstf_save_main_setting_aux:
  {
    \exp_args:Nno
    \keys_precompile:nnN
      { wrapstuff }
      { \l__wstf_main_kv_tl } \l__wstf_main_kv_tl
    \tl_gconcat:NNN
      \g__wstf_main_setting_tl
      \g__wstf_main_setting_tl
      \l__wstf_main_kv_tl
  }
\__wstf_set_top_line:
\cs_new_protected_nopar:Npn \__wstf_set_top_line:
  {
    \int_compare:nNnF \l__wstf_top_int < \c_zero_int
      {
        \tl_gput_right:Nx \g__wstf_main_setting_tl
          {
            \int_set:Nn \l__wstf_top_int
              { \int_use:N \l__wstf_top_int }
```

```
          }
      }
  }
```

__wstf_swap_ratio:

```
\cs_new_protected_nopar:Npn \__wstf_swap_ratio:
  {
    \exp_args:Ne \__wstf_swap_ratio_aux:n
      { \__wstf_counter:n { wrapstuff } }
  }
\cs_new_protected:Npn \__wstf_swap_ratio_aux:n #1
  {
    \fp_compare:nF
      { \c_zero_fp < \l__wstf_ratio_fp < \c_one_fp }
      { \fp_zero:N \l__wstf_ratio_fp }
    \prop_get:NnNF \g__wstf_page_prop {#1} \l__wstf_page_tl
      { \tl_set:Nx \l__wstf_page_tl { \__wstf_counter:n { page } } }
    \int_if_odd:nTF { \l__wstf_page_tl }
      { \bool_if:NTF \l__wstf_inner_bool }
      { \bool_if:NTF \l__wstf_outer_bool }
      { \__wstf_set_ratio:N \l__wstf_ratio_fp }
      { \__wstf_set_ratio:n { \c_one_fp - \l__wstf_ratio_fp } }
    \prop_gput:Nno \g__wstf_rerun_prop {#1} { \l__wstf_page_tl }
  }
\bool_new:N \l__wstf_swap_bool
\bool_new:N \l__wstf_inner_bool
\bool_new:N \l__wstf_outer_bool
```

__wstf_next_para:

将 wrapstuff 环境之后的段落放入内部环境 wrapstuff@par 中。为了控制钩子执行顺序，需要使用 wrapstuff 标签，而不用更为方便的 \hook_gput_next_code:nn 实现。

```
\__wstf_gadd_hook:nn { para/before } { \__wstf_para_before: }
\__wstf_gadd_hook:nn { para/after }  { \__wstf_para_after: }
\__wstf_gadd_hook:nn { para/begin }  { \__wstf_para_begin: }
\__wstf_gadd_hook:nn { para/end }    { \__wstf_para_end: }
\cs_new_protected_nopar:Npn \__wstf_next_para:
  {
    \cs_gset_eq:NN \__wstf_para_before: \__wstf_env_before:
    \cs_gset_eq:NN \__wstf_para_begin:  \__wstf_env_begin:
    \cs_gset_eq:NN \__wstf_para_end:    \__wstf_env_end:
  }
\cs_new_protected_nopar:Npn \__wstf_env_before:
  { \dim_gset_eq:NN \g__wstf_prevdepth_dim \tex_prevdepth:D }
\cs_new_protected_nopar:Npn \__wstf_env_begin:
  { \begin { wrapstuff@par } }
\cs_new_protected_nopar:Npn \__wstf_env_end:
  { \end { wrapstuff@par } }
\cs_new_protected_nopar:Npn \__wstf_clear_para_hook:
  {
    \cs_gset_eq:NN \__wstf_para_before: \__wstf_empty:
    \cs_gset_eq:NN \__wstf_para_after:  \__wstf_empty:
    \cs_gset_eq:NN \__wstf_para_begin:  \__wstf_empty:
    \cs_gset_eq:NN \__wstf_para_end:    \__wstf_empty:
  }
\cs_new_protected_nopar:Npn \__wstf_empty:
  { }
\cs_new_eq:NN \__wstf_para_before: \__wstf_empty:
\cs_new_eq:NN \__wstf_para_after:  \__wstf_empty:
\cs_new_eq:NN \__wstf_para_begin:  \__wstf_empty:
\cs_new_eq:NN \__wstf_para_end:    \__wstf_empty:
```

wrapstuff@par

内部环境，实现主要功能。

```
\NewDocumentEnvironment { wrapstuff@par } { }
  {
    \tl_use:N \g__wstf_main_setting_tl
    \dim_set:Nn \l__wstf_leftsep_dim { \l__wstf_leftsep_tl }
    \dim_set:Nn \l__wstf_rightsep_dim { \l__wstf_rightsep_tl }
    \dim_set:Nn \l__wstf_voffset_dim { \l__wstf_voffset_tl }
```

```
    \dim_set:Nn \l__wstf_line_dim { \l__wstf_linewidth_tl }
    \dim_set:Nn \l__wstf_min_dim { \box_dp:N \strutbox }
    \dim_set_eq:NN \l__wstf_main_width_dim \l__wstf_line_dim
    \dim_sub:Nn \l__wstf_line_dim
      { \tex_leftskip:D + \tex_rightskip:D }
    \dim_set:Nn \l__wstf_window_dim
      { \l__wstf_line_dim - \g__wstf_stuff_wd_dim }
    \fp_compare:nNnTF \l__wstf_ratio_fp > \c_zero_fp
      {
        \fp_compare:nNnTF \l__wstf_ratio_fp < \c_one_fp
          { \__wstf_set_window: }
          { \__wstf_set_hang_right: }
      }
      { \__wstf_set_hang_left: }
    \int_compare:nNnTF \g__wstf_window_int > \c_zero_int
      {
        \int_set_eq:NN \l__wstf_window_int \g__wstf_window_int
        \int_zero:N \l__wstf_top_int
      }
      { \__wstf_set_lines: }
    \bool_if:NTF \l__wstf_hang_bool
      {
        \dim_set_eq:NN \l__wstf_display_dim \l__wstf_window_dim
        \int_set_eq:NN \l__wstf_window_line_int \l__wstf_window_int
      }
      {
        \dim_set_eq:NN \l__wstf_display_dim \l__wstf_l_dim
        \int_set:Nn \l__wstf_window_int { \l__wstf_window_int * 2 }
        \int_set:Nn \l__wstf_window_line_int
          {
            \bool_if:NTF \g__wstf_column_bool
              { \l__wstf_window_int / 2 + \g__wstf_column_int }
              { \l__wstf_window_int }
          }
      }
    \cs_gset_eq:NN \__wstf_para_before: \__wstf_empty:
    \cs_gset_eq:NN \__wstf_para_begin:  \__wstf_empty:
    \__wstf_save_parshape:
    \__wstf_parbox_restore:
    \vbox_set:Nw \l__wstf_body_box
      \__wstf_set_prevdepth:N \g__wstf_prevdepth_dim
      \__wstf_save_tex_skip:
      \__wstf_tex_parameter:
      \__wstf_restore_parshape:
      \__wstf_display_parameter:
      \__wstf_make_main_parshape:
      \para_raw_noindent:
  }
  {
      \__wstf_save_hangfrom:
      \__wstf_save_tex_skip:
      \__wstf_group_kludge:
      \__wstf_tex_parameter:
      \__wstf_make_main_parshape:
      \para_raw_end:
      \int_gset_eq:NN \g__wstf_line_int \tex_prevgraf:D
    \vbox_set_end:
    \__wstf_adjust_tex_skip:
    \cs_gset_eq:NN \__wstf_para_end:   \__wstf_empty:
    \cs_gset_eq:NN \__wstf_para_after: \__wstf_empty:
    \int_compare:nNnTF \g__wstf_line_int > \l__wstf_top_int
      { \__wstf_build_par: }
      { \__wstf_put_par: }
  }
\box_new:N \l__wstf_body_box
\box_new:N \l__wstf_window_box
\int_new:N \l__wstf_window_int
```

```
\int_new:N \g__wstf_line_int
\int_new:N \l__wstf_window_line_int
\dim_new:N \l__wstf_l_dim
\dim_new:N \l__wstf_r_dim
\dim_new:N \l__wstf_min_dim
\dim_new:N \l__wstf_line_dim
\dim_new:N \l__wstf_window_dim
\dim_new:N \l__wstf_display_dim
\dim_new:N \l__wstf_voffset_dim
\dim_new:N \l__wstf_leftsep_dim
\dim_new:N \l__wstf_rightsep_dim
\dim_new:N \l__wstf_main_width_dim
\bool_new:N \l__wstf_hang_bool
```

```
\__wstf_set_hang_left:
\__wstf_set_hang_right:
    \__wstf_set_window:
\cs_new_protected_nopar:Npn \__wstf_set_hang_left:
  {
    \bool_set_true:N \l__wstf_hang_bool
    \__wstf_set_hoffset:N \l__wstf_rightsep_dim
    \dim_zero:N \l__wstf_l_dim
    \dim_set_eq:NN \l__wstf_r_dim \l__wstf_window_dim
    \cs_set_eq:NN \__wstf_build_box: \__wstf_build_hang:
  }
\cs_new_protected_nopar:Npn \__wstf_set_hang_right:
  {
    \bool_set_true:N \l__wstf_hang_bool
    \__wstf_set_hoffset:N \l__wstf_leftsep_dim
    \dim_zero:N \l__wstf_r_dim
    \dim_set_eq:NN \l__wstf_l_dim \l__wstf_window_dim
    \cs_set_eq:NN \__wstf_build_box: \__wstf_build_hang:
  }
\cs_new_protected_nopar:Npn \__wstf_set_window:
  {
    \bool_set_false:N \l__wstf_hang_bool
    \dim_sub:Nn \l__wstf_window_dim
      { \l__wstf_leftsep_dim + \l__wstf_rightsep_dim }
    \dim_set:Nn \l__wstf_l_dim
      { \__wstf_ratio:Nn \l__wstf_ratio_fp { \l__wstf_window_dim } }
    \dim_set:Nn \l__wstf_r_dim
      { \l__wstf_window_dim - \l__wstf_l_dim }
    \bool_if:NTF \l__wstf_column_bool
      { \cs_set_eq:NN \__wstf_build_box: \__wstf_build_column: }
      { \cs_set_eq:NN \__wstf_build_box: \__wstf_build_block: }
  }
```

```
\__wstf_set_hoffset:N
\cs_new_protected:Npn \__wstf_set_hoffset:N #1
  {
    \dim_sub:Nn \l__wstf_window_dim {#1}
    \group_begin:
      \dim_set:Nn \l__wstf_width_dim { #1 + \g__wstf_stuff_wd_dim }
      \cs_set_eq:NN \width \l__wstf_width_dim
    \exp_args:NNNx \group_end:
    \dim_add:Nn \l__wstf_window_dim
      { \dim_eval:n { \l__wstf_hoffset_tl } }
  }
```

```
  \__wstf_set_lines:
\__wstf_window_init:
\cs_new_protected_nopar:Npn \__wstf_set_lines:
  {
    \bool_if:NTF \g__wstf_next_bool
      { \tl_clear:N \l__wstf_lines_tl }
      { \tl_set:Nx \l__wstf_lines_tl { \l__wstf_lines_tl } }
    \int_set:Nn \l__wstf_window_int
      {
        \tl_if_empty:NTF \l__wstf_lines_tl
          { \__wstf_unit:n { \g__wstf_remaining_dim + \l__wstf_min_dim } }
          { \l__wstf_lines_tl }
      }
    \bool_if:NF \g__wstf_next_bool
```

```
      { \__wstf_window_init: }
    \int_compare:nNnTF \g__wstf_top_int < \c_zero_int
      {
        \int_compare:nNnT \l__wstf_top_int < \c_zero_int
          { \int_zero:N \l__wstf_top_int }
      }
      { \int_set_eq:NN \l__wstf_top_int \g__wstf_top_int }
  }
\cs_new_protected_nopar:Npn \__wstf_window_init:
  {
    \int_gset_eq:NN \g__wstf_column_int \l__wstf_window_int
    \dim_gset:Nn \g__wstf_window_ht_dim
      { \tex_baselineskip:D * \g__wstf_column_int }
    \tl_if_empty:NF \l__wstf_lines_tl
      {
        \dim_gset:Nn \g__wstf_remaining_dim
          { \g__wstf_window_ht_dim - \box_ht:N \strutbox }
        \dim_gset_eq:NN \g__wstf_stuff_ht_dim \g__wstf_remaining_dim
      }
  }
```

__wstf_make_main_parshape: 主要处理用于标题悬挂的 \@hangfrom 和用于列表环境的 \parshape。

```
\cs_new_protected_nopar:Npn \__wstf_make_main_parshape:
  {
    \dim_compare:nNnTF \g__wstf_hangindent_dim > \c_zero_dim
      {
        \int_compare:nNnTF \g__wstf_hangafter_int = \c_one_int
          { \__wstf_make_hangfrom: }
          { \__wstf_make_main_parshape_aux: }
      }
      { \__wstf_make_main_parshape_aux: }
  }
\cs_new_protected_nopar:Npn \__wstf_make_main_parshape_aux:
  {
    \bool_gset_false:N \g__wstf_hangfrom_bool
    \tex_parshape:D
      \int_eval:n { \l__wstf_top_int + 1 } ~
      \prg_replicate:nn
        { \l__wstf_top_int }
        { \g__wstf_parshape_indent_dim \g__wstf_parshape_length_dim }
      \c_zero_dim \c_max_dim
  }
\cs_new_protected_nopar:Npn \__wstf_save_parshape:
  {
    \int_gset_eq:NN \g__wstf_parshape_int \tex_parshape:D
    \int_compare:nNnTF \g__wstf_parshape_int = \c_one_int
      {
        \dim_gset:Nn \g__wstf_parshape_indent_dim
          { \tex_parshapeindent:D \c_one_int }
        \dim_gset:Nn \g__wstf_parshape_length_dim
          { \tex_parshapelength:D \c_one_int }
      }
      {
        \int_gzero:N \g__wstf_parshape_int
        \dim_gzero:N \g__wstf_parshape_indent_dim
        \dim_gset_eq:NN \g__wstf_parshape_length_dim \l__wstf_main_width_dim
        \int_gset_eq:NN \g__wstf_hangafter_int  \tex_hangafter:D
        \dim_gset_eq:NN \g__wstf_hangindent_dim \tex_hangindent:D
      }
  }
\cs_new_protected_nopar:Npn \__wstf_restore_parshape:
  {
    \int_compare:nNnTF \g__wstf_parshape_int = \c_one_int
      {
        \tex_parshape:D \g__wstf_parshape_int
          \g__wstf_parshape_indent_dim
          \g__wstf_parshape_length_dim
```

```
      }
      { \__wstf_restore_hangfrom: }
  }
\cs_new_protected_nopar:Npn \__wstf_parshape_kern:
  {
    \dim_compare:nNnT \l__wstf_l_dim = \c_zero_dim
      {
        \dim_compare:nNnF \g__wstf_parshape_indent_dim = \c_zero_dim
          { \tex_kern:D - \g__wstf_parshape_indent_dim }
      }
  }
\cs_new_protected_nopar:Npn \__wstf_make_hangfrom:
  {
    \bool_if:NTF \l__wstf_hang_bool
      { \__wstf_make_hangfrom_aux: }
      { \__wstf_make_main_parshape_aux: }
  }
\cs_new_protected_nopar:Npn \__wstf_make_hangfrom_aux:
  {
    \__wstf_restore_hangfrom:
    \int_zero:N \tex_parshape:D
    \bool_gset_true:N \g__wstf_hangfrom_bool
    \dim_set_eq:NN \tex_hsize:D \l__wstf_window_dim
  }
\cs_new_protected_nopar:Npn \__wstf_save_hangfrom:
  {
    \int_gset_eq:NN \g__wstf_hangafter_int  \tex_hangafter:D
    \dim_gset_eq:NN \g__wstf_hangindent_dim \tex_hangindent:D
  }
\cs_new_protected_nopar:Npn \__wstf_restore_hangfrom:
  {
    \int_set_eq:NN \tex_hangafter:D  \g__wstf_hangafter_int
    \dim_set_eq:NN \tex_hangindent:D \g__wstf_hangindent_dim
  }
\bool_new:N \g__wstf_hangfrom_bool
\int_new:N \g__wstf_parshape_int
\int_new:N \g__wstf_hangafter_int
\dim_new:N \g__wstf_hangindent_dim
```

`\__wstf_group_kludge:` LaTeX 的 `\list` 环境中，为了保持 `\parshape`，`\par` 被重定义为 `{\@@par}`。

```
\cs_new_protected_nopar:Npn \__wstf_group_kludge:
  {
    \scan_stop:
    \int_compare:nNnTF \tex_currentgrouptype:D = \c_one_int
      {
        \c_group_end_token
        \cs_gset_eq:NN \__wstf_group_begin: \c_group_begin_token
      }
      { \cs_gset_eq:NN \__wstf_group_begin: \__wstf_empty: }
    \legacy_if:nTF { @noitemarg }
      { \cs_gset_eq:NN \__wstf_set_itemarg: \@noitemargtrue }
      { \cs_gset_eq:NN \__wstf_set_itemarg: \__wstf_empty: }
  }
\cs_new_eq:NN \__wstf_set_itemarg: \__wstf_empty:
\cs_new_eq:NN \__wstf_group_begin: \__wstf_empty:
\__wstf_gadd_hook:nn { env/wrapstuff@par/after }
  {
    \__wstf_set_itemarg:
    \__wstf_group_begin:
  }
```

`\__wstf_ratio:Nn` `\__wstf_unit:n`

```
\cs_new:Npn \__wstf_ratio:Nn #1#2
  { \fp_to_dim:n { #1 \dim_to_fp:n {#2} } }
\cs_new:Npn \__wstf_unit:n #1
  {
    \int_eval:n
      {
```

```
        \exp_last_unbraced:Ne \__wstf_unit_aux:w
          { \dim_to_decimal_in_unit:nn {#1} { \tex_baselineskip:D } }
        \s_stop
      }
  }
\cs_new:Npn \__wstf_unit_aux:w #1 . #2 \s_stop
  { #1 + 1 }

\__wstf_save_tex_skip:
\__wstf_tex_parameter:
\cs_new_protected_nopar:Npn \__wstf_save_tex_skip:
  {
    \skip_gset_eq:NN \g__wstf_left_skip \tex_leftskip:D
    \skip_gset_eq:NN \g__wstf_right_skip \tex_rightskip:D
    \skip_gset_eq:NN \g__wstf_parfill_skip \tex_parfillskip:D
    \skip_gset_eq:NN \g__wstf_baseline_skip \tex_baselineskip:D
    \skip_gset:Nn \g__wstf_main_left_skip { - \tex_leftskip:D }
  }
\cs_new_protected_nopar:Npn \__wstf_adjust_tex_skip:
  {
    \__wstf_adjust_skip:N \g__wstf_left_skip
    \__wstf_adjust_skip:N \g__wstf_right_skip
    \__wstf_adjust_skip:N \g__wstf_parfill_skip
  }
\cs_new_protected:Npn \__wstf_adjust_skip:N #1
  { \skip_gsub:Nn #1 { \dim_eval:n {#1} } }
\cs_new_protected_nopar:Npn \__wstf_tex_parameter:
  {
    \int_zero:N \tex_clubpenalty:D
    \int_zero:N \tex_widowpenalty:D
    \int_zero:N \tex_interlinepenalty:D
    \int_zero:N \tex_displaywidowpenalty:D
    \int_zero:N \tex_clubpenalties:D
    \int_zero:N \tex_widowpenalties:D
    \int_zero:N \tex_interlinepenalties:D
    \int_zero:N \tex_displaywidowpenalties:D
    \skip_set_eq:NN \tex_leftskip:D \g__wstf_left_skip
    \skip_set_eq:NN \tex_rightskip:D \g__wstf_right_skip
    \skip_set_eq:NN \tex_parfillskip:D \g__wstf_parfill_skip
    \skip_set_eq:NN \tex_baselineskip:D \g__wstf_baseline_skip
  }
\skip_new:N \g__wstf_left_skip
\skip_new:N \g__wstf_right_skip
\skip_new:N \g__wstf_parfill_skip
\skip_new:N \g__wstf_baseline_skip
\skip_new:N \g__wstf_main_left_skip

\__wstf_display_parameter:
\cs_new_protected_nopar:Npn \__wstf_display_parameter:
  {
    \bool_gset_false:N \g__wstf_display_bool
    \tex_everydisplay:D \exp_after:wN
      {
        \tex_the:D \tex_everydisplay:D
        \__wstf_display_hook:
      }
  }
\cs_new_protected_nopar:Npn \__wstf_display_hook:
  {
    \__wstf_test_leqno:
    \dim_compare:nNnF \tex_displaywidth:D < \c_max_dim
      {
        \bool_gset_true:N \g__wstf_display_bool
        \dim_set_eq:NN \tex_displaywidth:D \l__wstf_display_dim
      }
  }
\cs_new_eq:NN \__wstf_test_leqno: \__wstf_empty:
\cs_new_protected_nopar:Npn \__wstf_clear_display_hook:
  { \cs_gset_eq:NN \__wstf_display_hook: \__wstf_empty: }

\__wstf_split_parameter:
\cs_new_protected_nopar:Npn \__wstf_split_parameter:
```

```
  {
    \skip_zero:N \tex_splittopskip:D
    \dim_set_eq:NN \tex_vfuzz:D \c_max_dim
    \int_set_eq:NN \tex_vbadness:D \c_max_int
  }
\__wstf_build_par:
\cs_new_protected_nopar:Npn \__wstf_build_par:
  {
    \bool_if:NTF \g__wstf_hangfrom_bool
      { \__wstf_build_box: }
      { \__wstf_build_par_aux: }
    \box_if_empty:NTF \l__wstf_window_box
      { \__wstf_put_next_par: }
      { \__wstf_put_box: }
  }
\cs_new_protected_nopar:Npn \__wstf_build_par_aux:
  {
    \__wstf_extract_display_hbox:NN \l__wstf_body_box \l__wstf_bottom_box
    \int_compare:nNnT \l__wstf_top_int > \c_zero_int
      { \__wstf_put_body_box: }
    \box_if_empty:NTF \l__wstf_bottom_box
      {
        \box_if_empty:NF \g__wstf_display_box
          { \__wstf_build_display_box: }
      }
      { \__wstf_build_body_box: }
  }
\box_new:N \l__wstf_bottom_box
\__wstf_put_par:
\cs_new_protected_nopar:Npn \__wstf_put_par:
  {
    \int_gset:Nn \g__wstf_top_int
      { \l__wstf_top_int - \g__wstf_line_int }
    \int_gzero:N \g__wstf_window_int
    \__wstf_put_body_box:
    \skip_zero:N \tex_parskip:D
    \para_raw_noindent:
    \__wstf_next_para:
  }
\__wstf_put_body_box:
\cs_new_protected_nopar:Npn \__wstf_put_body_box:
  {
    \__wstf_para_raw_end:
    \dim_compare:nNnTF { \box_wd:N \l__wstf_body_box } < \c_max_dim
      { \__wstf_put_body_aux:N \l__wstf_body_box }
      {
        \__wstf_extract_hbox:NN \l__wstf_body_box \l__wstf_bottom_box
        \__wstf_put_body_aux:N \l__wstf_body_box
        \box_set_eq_drop:NN \l__wstf_body_box \l__wstf_bottom_box
      }
    \__wstf_para_raw_end:
  }
\cs_new_protected_nopar:Npn \__wstf_put_body_aux:N #1
  {
    \dim_gset:Nn \g__wstf_prevdepth_dim { \box_dp:N #1 }
    \dim_compare:nNnT \g__wstf_prevdepth_dim = \c_zero_dim
      { \__wstf_extract_depth:N #1 }
    \vbox_unpack_drop:N #1
    \__wstf_set_prevdepth:N \g__wstf_prevdepth_dim
  }
\cs_new_protected_nopar:Npn \__wstf_extract_depth:N #1
  {
    \vbox_set:Nn \l__wstf_last_box
      {
        \vbox_unpack:N #1
        \__wstf_if_last_hlist:F
          {
            \tex_unskip:D \tex_unpenalty:D
```

```
            \tex_unskip:D \tex_unpenalty:D
          }
        \__wstf_if_last_hlist:T
          {
            \box_set_to_last:N \l__wstf_last_box
            \dim_gset:Nn \g__wstf_prevdepth_dim
              { \box_dp:N \l__wstf_last_box }
          }
      }
  }
\__wstf_put_next_par:
\cs_new_protected_nopar:Npn \__wstf_put_next_par:
  {
    \int_gzero:N \g__wstf_top_int
    \int_gzero:N \g__wstf_window_int
    \skip_zero:N \tex_parskip:D
    \para_raw_noindent:
    \__wstf_next_para:
  }
\__wstf_build_display_box:
\cs_new_protected_nopar:Npn \__wstf_build_display_box:
  {
    \bool_set_true:N \l__wstf_display_bool
    \bool_if:NTF \g__wstf_amsmath_bool
      { \__wstf_build_display_amsmath: }
      { \__wstf_build_display_normal: }
    \box_if_empty:NTF \l__wstf_body_box
      { \__wstf_build_display_auxi: }
      { \__wstf_build_display_auxii: }
  }
\cs_new_protected_nopar:Npn \__wstf_build_display_amsmath:
  {
    \group_begin:
      \vbox_gset:Nn \g__wstf_equation_box
        {
          \__wstf_break:
          \vbox_unpack_drop:N \g__wstf_display_box
          \skip_gset_eq:NN \g__wstf_pos_skip \tex_lastskip:D
          \tex_unskip:D
          \int_gset_eq:NN \g__wstf_pos_int \tex_lastpenalty:D
          \tex_unpenalty:D
          \skip_gadd:Nn \g__wstf_pos_skip { \tex_lastskip:D }
          \tex_unskip:D
          \tex_unpenalty:D
        }
      \__wstf_split_parameter:
      \vbox_set_split_to_ht:NNn \l__wstf_last_box \g__wstf_equation_box
        { \c_zero_dim }
    \group_end:
    \box_gset_wd:Nn \g__wstf_equation_box { \l__wstf_display_dim }
    \vbox_gset:Nn \g__wstf_display_box
      {
        \tex_penalty:D \g__wstf_display_pre_int
        \skip_vertical:N \g__wstf_display_pre_skip
      }
    \skip_gset_eq:NN \g__wstf_pre_skip \g__wstf_display_pre_skip
  }
\cs_new_protected_nopar:Npn \__wstf_build_display_normal:
  {
    \vbox_gset:Nn \g__wstf_display_box
      {
        \vbox_unpack_drop:N \g__wstf_display_box
        \skip_gset_eq:NN \g__wstf_pos_skip \tex_lastskip:D
        \tex_unskip:D
        \int_gset_eq:NN \g__wstf_pos_int \tex_lastpenalty:D
        \tex_unpenalty:D
        \box_gset_to_last:N \g__wstf_equation_box
        \skip_gset_eq:NN \g__wstf_pre_skip \tex_lastskip:D
```

```
        \tex_unskip:D
        \skip_gadd:Nn \g__wstf_pre_skip { \tex_lastskip:D }
        \tex_unskip:D
        \skip_vertical:N \g__wstf_pre_skip
      }
  }
\cs_new_protected_nopar:Npn \__wstf_build_display_auxi:
  {
    \bool_if:NTF \g__wstf_amsmath_bool
      { \box_set_eq_drop:NN \l__wstf_window_box \g__wstf_equation_box }
      {
        \hbox_set_to_wd:Nnn \l__wstf_window_box
          { \l__wstf_display_dim }
          {
            \tex_hss:D
              \__wstf_adjust_equation:
              \box_use_drop:N \g__wstf_equation_box
            \tex_hss:D
          }
      }
    \dim_gset:Nn \g__wstf_ht_dim { \box_ht:N \l__wstf_window_box }
    \dim_add:Nn \l__wstf_voffset_dim
      { \box_ht:N \g__wstf_display_box / 2 }
  }
\cs_new_protected_nopar:Npn \__wstf_build_display_auxii:
  {
    \box_if_horizontal:NTF \l__wstf_body_box
      {
        \box_set_eq:NN \l__wstf_bottom_box \l__wstf_body_box
        \__wstf_build_display_auxiii:
      }
      {
        \__wstf_extract_hbox:NN \l__wstf_body_box \l__wstf_bottom_box
        \str_if_eq:eeTF
          {
            \dim_eval:n { \box_ht:N \l__wstf_body_box }
            \dim_eval:n { \box_dp:N \l__wstf_body_box }
            \dim_eval:n { \box_ht:N \l__wstf_bottom_box }
            \dim_eval:n { \box_dp:N \l__wstf_bottom_box }
          }
          { \c__wstf_zero_pt_str }
          {
            \vbox_unpack_drop:N \l__wstf_body_box
            \box_clear:N \l__wstf_bottom_box
            \__wstf_build_display_auxi:
          }
          { \__wstf_build_display_auxiii: }
      }
  }
\str_const:Nx \c__wstf_zero_pt_str
  {
    \dim_use:N \c_zero_dim
    \dim_use:N \c_zero_dim
    \dim_use:N \c_zero_dim
    \dim_use:N \c_zero_dim
  }
\cs_new_protected_nopar:Npn \__wstf_build_display_auxiii:
  {
    \bool_set_true:N \l__wstf_attach_equation_bool
    \box_gclear:N \g__wstf_display_box
    \bool_if:NF \g__wstf_amsmath_bool
      { \__wstf_adjust_equation: }
    \__wstf_build_body_box:
  }
\bool_new:N \l__wstf_display_bool
\bool_new:N \l__wstf_attach_equation_bool
```

__wstf_attach_left:N
__wstf_attach_right:N

```
\cs_new_protected:Npn \__wstf_attach_left:N #1
  {
    \__wstf_attach_equation:Nn #1
      { \g__wstf_parshape_indent_dim }
  }
\cs_new_protected:Npn \__wstf_attach_right:N #1
  {
    \__wstf_attach_equation:Nn #1
      {
          \l__wstf_line_dim
        - \l__wstf_display_dim
        + \g__wstf_parshape_indent_dim
      }
  }
\cs_new_protected:Npn \__wstf_attach_equation:Nn #1#2
  {
    \vbox_set:Nn \l__wstf_last_box
      {
        \vbox_unpack:N #1
        \box_set_to_last:N \l__wstf_last_box
        \bool_if:NTF \g__wstf_amsmath_bool
          { \__wstf_attach_equation_amsmath:Nn }
          { \__wstf_attach_equation_normal:Nn }
        \l__wstf_last_box {#2}
      }
  }
\cs_new_protected:Npn \__wstf_attach_equation_amsmath:Nn #1#2
  {
    \vbox_gset:Nn \g__wstf_equation_box
      {
        \__wstf_nobreak:
        \skip_vertical:n
          {
              \g__wstf_display_pre_skip
            + \g__wstf_display_pre_dim
            - \box_dp:N #1
          }
        \box_move_right:nn {#2}
          { \box_use_drop:N \g__wstf_equation_box }
      }
  }
\cs_new_protected:Npn \__wstf_attach_equation_normal:Nn #1#2
  {
    \vbox_set:Nn \l__wstf_last_box
      {
        \__wstf_tex_parameter:
        \dim_set_eq:NN \tex_hsize:D \l__wstf_display_dim
        \para_raw_noindent:
          \hbox_unpack_drop:N #1 \tex_unskip:D
          \__wstf_insert_equation:
        \para_raw_end:
        \skip_gset_eq:NN \g__wstf_pos_skip \tex_lastskip:D
        \tex_unskip:D
        \int_gset_eq:NN \g__wstf_pos_int \tex_lastpenalty:D
        \tex_unpenalty:D
        \box_set_to_last:N \l__wstf_last_box
        \skip_set_eq:NN \l__wstf_last_skip \tex_lastskip:D
        \tex_unskip:D
        \skip_add:Nn \l__wstf_last_skip { \tex_lastskip:D }
        \vbox_gset:Nn \g__wstf_equation_box
          {
            \__wstf_nobreak:
            \skip_vertical:N \l__wstf_last_skip
            \box_move_right:nn {#2}
              {
                \hbox_to_wd:nn
                  { \l__wstf_display_dim }
```

```
                  {
                    \tex_hss:D
                      \box_use_drop:N \l__wstf_last_box
                    \tex_hss:D
                  }
              }
          }
      }
  }
\cs_new_protected_nopar:Npn \__wstf_insert_equation:
  {
    \c_math_toggle_token \c_math_toggle_token
      \dim_compare:nNnTF \tex_displaywidth:D = \l__wstf_display_dim
        { \box_use_drop:N \g__wstf_equation_box }
        {
          \bool_if:NTF \g__wstf_eqnum_bool
            { \__wstf_repack_equation: }
            { \box_use_drop:N \g__wstf_equation_box }
        }
    \c_math_toggle_token \c_math_toggle_token
  }
\cs_new_protected_nopar:Npn \__wstf_repack_equation:
  {
    \box_gclear:N \g__wstf_equation_box
    \box_use_drop:N \g__wstf_eqbody_box
    \bool_if:NTF \g__wstf_leqno_bool
      { \tex_leqno:D }
      { \tex_eqno:D }
    \box_use_drop:N \g__wstf_eqnum_box
  }
\cs_new_protected_nopar:Npn \__wstf_adjust_equation:
  {
    \__wstf_test_eqnum:
    \bool_if:NT \g__wstf_eqnum_bool
      { \__wstf_adjust_equation_width: }
  }
\cs_new_protected_nopar:Npn \__wstf_test_eqnum:
  {
    \hbox_set:Nn \l__wstf_last_box
      {
        \bool_gset_false:N \g__wstf_eqnum_bool
        \hbox_unpack:N \g__wstf_equation_box
        \__wstf_if_last_hlist:F { \use_none_delimit_by_s_stop:w }
        \box_gset_to_last:N \g__wstf_eqnum_box
        \__wstf_if_last_kern:F  { \use_none_delimit_by_s_stop:w }
        \tex_unkern:D
        \__wstf_if_last_hlist:F { \use_none_delimit_by_s_stop:w }
        \box_gset_to_last:N \g__wstf_eqbody_box
        \__wstf_if_last_none:F  { \use_none_delimit_by_s_stop:w }
        \bool_gset_true:N \g__wstf_eqnum_bool
        \use_none_delimit_by_s_stop:w \s_stop
      }
  }
\cs_new_protected_nopar:Npn \__wstf_adjust_equation_width:
  {
    \bool_if:NTF \g__wstf_leqno_bool
      { \__wstf_adjust_leqno: }
      {
        \box_gset_wd:Nn \g__wstf_equation_box
          { \box_wd:N \g__wstf_eqbody_box }
      }
  }
\cs_new_protected_nopar:Npn \__wstf_adjust_leqno:
  {
    \box_set_eq_drop:NN \l__wstf_last_box \g__wstf_eqnum_box
    \box_gset_eq_drop:NN \g__wstf_eqnum_box \g__wstf_eqbody_box
    \box_gset_eq_drop:NN \g__wstf_eqbody_box \l__wstf_last_box
```

```
    \hbox_gset:Nn \g__wstf_equation_box
      {
        \skip_horizontal:n
          {
              \box_wd:N \g__wstf_eqbody_box
            - \box_wd:N \g__wstf_equation_box
          }
        \box_use_drop:N \g__wstf_equation_box
      }
  }
\box_new:N \g__wstf_eqbody_box
\box_new:N \g__wstf_eqnum_box
\box_new:N \g__wstf_equation_box
\int_new:N \g__wstf_pos_int
\skip_new:N \g__wstf_pos_skip
\bool_new:N \g__wstf_eqnum_bool
\cs_new_protected_nopar:Npn \__wstf_add_pos_kludge:
  {
    \dim_gset:Nn \g__wstf_prevdepth_dim
      { \box_dp:N \l__wstf_window_box }
    \bool_gset_false:N \g__wstf_equation_dp_bool
    \bool_if:NTF \g__wstf_next_bool
      {
        \tex_vadjust:D
          {
            \box_if_empty:NF \g__wstf_equation_box
              { \__wstf_output_equation_box: }
            \__wstf_nobreak:
            \bool_if:NT \l__wstf_display_bool
              { \skip_vertical:N \g__wstf_pos_skip }
          }
      }
      {
        \bool_if:NT \l__wstf_display_bool
          {
            \tex_vadjust:D
              {
                \box_if_empty:NF \g__wstf_equation_box
                  { \__wstf_output_equation_box: }
                \tex_penalty:D \g__wstf_pos_int
                \skip_vertical:N \g__wstf_pos_skip
              }
          }
      }
    \int_gzero:N \g__wstf_pos_int
    \skip_gzero:N \g__wstf_pos_skip
  }
\cs_new_protected_nopar:Npn \__wstf_output_equation_box:
  {
    \cs_gset_eq:NN
      \__wstf_para_after:
      \__wstf_set_equation_depth:
    \bool_gset_true:N \g__wstf_equation_dp_bool
    \dim_gset:Nn \g__wstf_prevdepth_dim
      { \box_dp:N \g__wstf_equation_box }
    \vbox_unpack_drop:N \g__wstf_equation_box
  }
\cs_new_protected_nopar:Npn \__wstf_set_equation_depth:
  {
    \cs_gset_eq:NN \__wstf_para_after: \__wstf_empty:
    \bool_gset_false:N \g__wstf_equation_dp_bool
    \__wstf_set_prevdepth:N \g__wstf_prevdepth_dim
  }
\bool_new:N \g__wstf_equation_dp_bool
\cs_new_protected_nopar:Npn \__wstf_build_body_box:
  {
```

```
    \box_set_eq:NN \l__wstf_save_body_box \l__wstf_bottom_box
    \__wstf_build_window:
    \int_compare:nNnTF \g__wstf_line_int > \l__wstf_window_line_int
      { \__wstf_extract_hbox:NN \l__wstf_body_box \l__wstf_bottom_box }
      { \box_clear:N \l__wstf_bottom_box }
    \box_if_empty:NF \l__wstf_bottom_box
      { \bool_set_false:N \l__wstf_attach_equation_bool }
    \box_clear:N \l__wstf_window_box
    \__wstf_build_box:
  }
\box_new:N \l__wstf_save_body_box

\__wstf_build_body_box:
\cs_new_protected_nopar:Npn \__wstf_build_window:
  {
    \vbox_set:Nn \l__wstf_body_box
      {
        \dim_zero:N \tex_emergencystretch:D
        \dim_set_eq:NN \tex_hfuzz:D \c_max_dim
        \dim_set_eq:NN \tex_vfuzz:D \c_max_dim
        \int_set_eq:NN \tex_hbadness:D \c_max_int
        \int_set_eq:NN \tex_vbadness:D \c_max_int
        \int_set:Nn \tex_tolerance:D { 1000 }
        \para_raw_noindent:
          \hbox_unpack_drop:N \l__wstf_bottom_box
          \__wstf_tex_parameter:
          \__wstf_make_parshape:
          \__wstf_interline_penalties:
        \para_raw_end:
        \int_gset_eq:NN \g__wstf_line_int \tex_prevgraf:D
      }
  }

\__wstf_make_parshape:
\cs_new_protected_nopar:Npn \__wstf_make_parshape:
  {
    \tex_parshape:D
      \int_eval:n { \l__wstf_window_line_int + 1 } ~
      \bool_if:NTF \l__wstf_hang_bool
        {
          \prg_replicate:nn
            { \l__wstf_window_int }
            { \c_zero_dim \l__wstf_window_dim }
        }
        {
          \bool_if:NTF \l__wstf_column_bool
            {
              \prg_replicate:nn
                { \l__wstf_window_int / 2 }
                { \c_zero_dim \l__wstf_l_dim }
              \prg_replicate:nn
                {
                  \bool_if:NTF \g__wstf_column_bool
                    { \g__wstf_column_int }
                    { \l__wstf_window_int / 2 }
                }
                { \c_zero_dim \l__wstf_r_dim }
            }
            {
              \prg_replicate:nn
                { \l__wstf_window_int / 2 }
                {
                  \c_zero_dim \l__wstf_l_dim
                  \c_zero_dim \l__wstf_r_dim
                }
            }
        }
      \c_zero_dim \c_max_dim
  }
```

```
\__wstf_interline_penalties:
\cs_new_protected_nopar:Npn \__wstf_interline_penalties:
  {
    \bool_if:NF \l__wstf_hang_bool
      {
        \bool_if:NTF \l__wstf_column_bool
          { \__wstf_column_penalties: }
          { \__wstf_block_penalties: }
      }
  }
\cs_new_protected_nopar:Npn \__wstf_column_penalties:
  {
    \tex_interlinepenalties:D
      \int_eval:n { \l__wstf_window_int / 2 + \c_one_int } ~
      \prg_replicate:nn
        { \l__wstf_window_int / 2 - \c_one_int }
        { \c__wstf_nobreak_int }
      \c__wstf_break_int
      \c_zero_int
  }
\cs_new_protected_nopar:Npn \__wstf_block_penalties:
  {
    \tex_interlinepenalties:D \l__wstf_window_int
      \prg_replicate:nn
        { \l__wstf_window_int - \c_one_int }
        { \c__wstf_break_int }
      \c_zero_int
  }

    \__wstf_break:
\__wstf_nobreak:
\cs_new_protected_nopar:Npn \__wstf_break:
  { \tex_penalty:D \c__wstf_break_int }
\cs_new_protected_nopar:Npn \__wstf_nobreak:
  { \tex_penalty:D \c__wstf_nobreak_int }
\int_const:Nn \c__wstf_break_int { -10000 }
\int_const:Nn \c__wstf_nobreak_int { 10000 }

  \__wstf_build_box:
\__wstf_build_block:
\cs_new_protected_nopar:Npn \__wstf_build_block:
  {
    \vbox_set:Nn \l__wstf_window_box
      {
        \__wstf_split_parameter:
        \skip_set_eq:NN \tex_baselineskip:D \g__wstf_baseline_skip
        \__wstf_build_line:
      }
  }
\cs_new_protected_nopar:Npn \__wstf_build_line:
  {
    \vbox_set_split_to_ht:NNn \l__wstf_l_box \l__wstf_body_box
      { \g__wstf_baseline_skip }
    \vbox_set_split_to_ht:NNn \l__wstf_r_box \l__wstf_body_box
      { \g__wstf_baseline_skip }
    \__wstf_build_line_repack:
    \box_if_empty:NTF \l__wstf_body_box
      { \__wstf_put_last_line: }
      {
        \__wstf_put_line_box:
        \__wstf_build_line:
      }
  }
\cs_new_protected_nopar:Npn \__wstf_build_line_repack:
  {
    \vbox_set:Nn \l__wstf_l_box
      { \vbox_unpack_drop:N \l__wstf_l_box }
    \box_if_empty:NF \l__wstf_r_box
      {
        \vbox_set:Nn \l__wstf_r_box
          { \vbox_unpack_drop:N \l__wstf_r_box }
      }
```

```
    \__wstf_save_first_ht:
  }
\cs_new_protected_nopar:Npn \__wstf_put_last_line:
  {
    \bool_if:NT \l__wstf_attach_equation_bool
      { \__wstf_attach_left:N \l__wstf_l_box }
    \__wstf_put_line_box:
  }
\cs_new_protected_nopar:Npn \__wstf_put_line_box:
  {
    \hbox_to_wd:nn { \l__wstf_line_dim }
      {
        \box_use_drop:N \l__wstf_l_box
        \tex_hfil:D
        \box_use_drop:N \l__wstf_r_box
      }
  }
\cs_new_protected_nopar:Npn \__wstf_save_first_ht:
  {
    \dim_gset:Nn \g__wstf_ht_dim
      {
        \dim_max:nn
          { \box_ht:N \l__wstf_l_box }
          { \box_ht:N \l__wstf_r_box }
      }
    \cs_set_eq:NN \__wstf_save_first_ht: \__wstf_empty:
  }
\dim_new:N \g__wstf_ht_dim
\box_new:N \l__wstf_l_box
\box_new:N \l__wstf_r_box
\cs_new_protected_nopar:Npn \__wstf_build_column_fuzzy:
  {
    \hbox_set_to_wd:Nnn \l__wstf_window_box
      { \l__wstf_line_dim }
      {
        \__wstf_split_parameter:
        \__wstf_build_column_aux:
        \box_if_empty:NT \l__wstf_bottom_box
          { \__wstf_build_column_fuzzy_aux: }
        \__wstf_repack_left_box:
        \bool_if:NT \l__wstf_attach_equation_bool
          { \__wstf_attach_left:N \l__wstf_l_box }
        \box_use:N \l__wstf_l_box
        \tex_hfil:D
        \box_move_up:nn
          { \box_ht:N \l__wstf_l_box - \box_ht:N \l__wstf_r_box }
          { \box_use_drop:N \l__wstf_r_box }
      }
  }
\cs_new_protected_nopar:Npn \__wstf_build_column_aux:
  {
    \vbox_set_split_to_ht:NNn \l__wstf_l_box \l__wstf_body_box
      { \box_ht:N \l__wstf_body_box / 2 }
    \vbox_set_top:Nn \l__wstf_l_box
      { \vbox_unpack_drop:N \l__wstf_l_box }
    \box_set_eq_drop:NN \l__wstf_r_box \l__wstf_body_box
  }
\cs_new_protected_nopar:Npn \__wstf_build_column_fuzzy_aux:
  {
    \dim_compare:nNnTF
      {
        \box_ht_plus_dp:N \l__wstf_r_box -
        \box_ht_plus_dp:N \l__wstf_l_box
      }
      >
      { \l__wstf_min_dim }
      {
```

```
        \box_if_empty:NF \l__wstf_last_l_box
          {
            \box_set_eq_drop:NN \l__wstf_l_box \l__wstf_last_l_box
            \box_set_eq_drop:NN \l__wstf_r_box \l__wstf_last_r_box
          }
      }
      { \__wstf_rebuild_window: }
  }
\cs_new_protected_nopar:Npn \__wstf_rebuild_window:
  {
    \int_compare:nNnT \l__wstf_window_int > { 2 }
      { \__wstf_rebuild_window_aux: }
  }
\cs_new_protected_nopar:Npn \__wstf_rebuild_window_aux:
  {
    \int_sub:Nn \l__wstf_window_int { 2 }
    \box_set_eq_drop:NN \l__wstf_last_l_box \l__wstf_l_box
    \box_set_eq_drop:NN \l__wstf_last_r_box \l__wstf_r_box
    \box_set_eq:NN \l__wstf_bottom_box \l__wstf_save_body_box
    \int_set_eq:NN \l__wstf_window_line_int \l__wstf_window_int
    \__wstf_build_window:
    \__wstf_build_column_aux:
    \__wstf_build_column_fuzzy_aux:
  }
\box_new:N \l__wstf_last_l_box
\box_new:N \l__wstf_last_r_box
\cs_new_protected_nopar:Npn \__wstf_build_column_strict:
  {
    \group_begin:
      \__wstf_split_parameter:
      \__wstf_build_column_aux:
      \box_if_empty:NTF \l__wstf_r_box
        { \__wstf_build_column_strict_auxi: }
        {
          \box_if_empty:NTF \l__wstf_bottom_box
            { \__wstf_build_column_strict_auxii: }
            {
              \bool_if:NTF \g__wstf_column_bool
                { \__wstf_build_column_strict_auxiii: }
                { \__wstf_build_column_strict_auxiv: }
            }
        }
    \group_end:
    \box_set_eq_drop:NN \l__wstf_window_box \g__wstf_window_box
  }
\cs_new_protected_nopar:Npn \__wstf_build_column_strict_auxi:
  {
    \__wstf_repack_left_box:
    \bool_if:NT \l__wstf_attach_equation_bool
      { \__wstf_attach_left:N \l__wstf_l_box }
    \box_gset_eq_drop:NN \g__wstf_window_box \l__wstf_l_box
    \bool_gset_true:N \g__wstf_column_bool
    \bool_if:NF \g__wstf_first_save_bool
      {
        \bool_gset_true:N \g__wstf_first_save_bool
        \dim_gset:Nn \g__wstf_first_sep_dim
          { \tex_baselineskip:D - \g__wstf_ht_dim }
        \dim_gset_eq:NN \g__wstf_first_dp_dim \g__wstf_prevdepth_dim
      }
    \int_case:nnT { \g__wstf_window_int }
      {
        { \c_zero_int } { }
        { \g__wstf_line_int } { }
      }
      { \__wstf_column_move_entire_aux: }
  }
\cs_new_protected_nopar:Npn \__wstf_column_move_entire_aux:
```

```
  {
    \bool_gset_true:N \g__wstf_entire_bool
    \bool_gset_true:N \g__wstf_next_hang_bool
  }
\cs_new_protected_nopar:Npn \__wstf_column_move_entire:
  {
    \dim_gsub:Nn \g__wstf_first_sep_dim
      { \box_dp:N \l__wstf_window_box }
    \bool_gset_false:N \g__wstf_entire_bool
    \dim_gzero:N \g__wstf_column_ht_dim
    \dim_gset_eq:NN \g__wstf_prevdepth_dim \g__wstf_first_dp_dim
    \__wstf_column_right_move_set:nn
      { \g__wstf_stuff_ht_dim }
      { \g__wstf_window_ht_dim }
    \int_gset_eq:NN \g__wstf_window_int \g__wstf_column_int
  }
\cs_new_protected:Npn \__wstf_column_right_move_set:nn #1#2
  {
    \bool_gset_true:N \g__wstf_right_move_bool
    \bool_gset_true:N \g__wstf_first_set_bool
    \tl_gput_right:Nn \g__wstf_main_setting_tl
      {
        \bool_if:NTF \g__wstf_first_set_bool
          {
            \bool_gset_false:N \g__wstf_first_set_bool
            \bool_set_true:N \l__wstf_first_move_bool
          }
          { \bool_set_false:N \l__wstf_first_move_bool }
        \fp_zero:N \l__wstf_ratio_fp
      }
    \__wstf_make_next_stuff:nn
      { \l__wstf_line_dim - \l__wstf_r_dim - \l__wstf_rightsep_dim }
      {#1}
    \dim_gset:Nn \g__wstf_column_room_dim {#2}
    \int_gzero:N \g__wstf_top_int
  }
\cs_new_protected_nopar:Npn \__wstf_build_column_strict_auxii:
  {
    \bool_gset_false:N \g__wstf_entire_bool
    \__wstf_repack_left_box:
    \bool_if:NT \l__wstf_attach_equation_bool
      { \__wstf_attach_right:N \l__wstf_r_box }
    \dim_gset:Nn \g__wstf_hang_ht_dim
      {
        \g__wstf_stuff_ht_dim - \tex_baselineskip:D *
          \__wstf_unit:n { \box_ht_plus_dp:N \l__wstf_r_box }
        - \box_ht_plus_dp:N \g__wstf_equation_box
        - \g__wstf_pos_skip
      }
    \dim_compare:nNnTF \g__wstf_hang_ht_dim > \c_zero_dim
      { \__wstf_column_move_right: }
      { \__wstf_column_put_right: }
    \box_gset_ht:Nn \g__wstf_window_box { \box_ht:N \l__wstf_l_box }
    \box_gset_dp:Nn \g__wstf_window_box { \box_dp:N \l__wstf_l_box }
  }
\cs_new_protected_nopar:Npn \__wstf_column_move_right:
  {
    \int_compare:nNnTF \g__wstf_window_int > \c_zero_int
      {
        \dim_gset:Nn \g__wstf_column_room_dim
          {
              \g__wstf_window_ht_dim
            - \g__wstf_first_sep_dim
            - \box_ht_plus_dp:N \l__wstf_r_box
            - \box_ht_plus_dp:N \g__wstf_equation_box
          }
        \__wstf_next_hang_para:
```

```
      }
      {
        \dim_gset:Nn \g__wstf_column_room_dim
          {
              \box_ht:N \l__wstf_l_box
            - \box_ht_plus_dp:N \l__wstf_r_box
            - \box_ht_plus_dp:N \g__wstf_equation_box
          }
        \dim_gset:Nn \g__wstf_first_sep_dim
          { \tex_baselineskip:D - \g__wstf_ht_dim }
        \bool_gset_true:N \g__wstf_right_move_bool
        \bool_gset_true:N \g__wstf_next_hang_bool
      }
    \hbox_gset_to_wd:Nnn \g__wstf_window_box
      { \l__wstf_line_dim }
      {
        \box_use:N \l__wstf_l_box
        \tex_hfil:D
        \box_move_up:nn
          { \g__wstf_column_room_dim }
          { \box_use:N \l__wstf_r_box }
      }
    \dim_gset:Nn \g__wstf_column_ht_dim
      {
          \box_ht_plus_dp:N \l__wstf_r_box
        + \box_ht_plus_dp:N \g__wstf_equation_box
        + \g__wstf_pos_skip
      }
  }
\cs_new_protected_nopar:Npn \__wstf_column_put_right:
  {
    \hbox_gset_to_wd:Nnn \g__wstf_window_box
      { \l__wstf_line_dim }
      {
        \box_use:N \l__wstf_l_box
        \tex_hfil:D
        \box_move_up:nn
          {
            \int_compare:nNnTF \g__wstf_window_int > \c_zero_int
              { \g__wstf_window_ht_dim - \g__wstf_first_sep_dim }
              { \box_ht:N \l__wstf_l_box }
            - \box_ht:N \l__wstf_r_box
          }
          { \box_use:N \l__wstf_r_box }
      }
    \skip_gzero:N \g__wstf_pos_skip
  }
\cs_new_protected_nopar:Npn \__wstf_next_hang_para:
  {
    \bool_if:NTF \g__wstf_entire_bool
      { \__wstf_column_move_entire: }
      {
        \__wstf_column_right_move_set:nn
          { \g__wstf_hang_ht_dim }
          { \g__wstf_column_room_dim }
        \int_gzero:N \g__wstf_window_int
      }
    \bool_gset_false:N \g__wstf_next_hang_bool
  }
\cs_new_protected_nopar:Npn \__wstf_build_column_strict_auxiii:
  {
    \bool_gset_false:N \g__wstf_column_bool
    \__wstf_repack_left_box:
    \hbox_gset_to_wd:Nnn \g__wstf_window_box
      { \l__wstf_line_dim }
      {
        \box_use:N \l__wstf_l_box
```

```
        \tex_hfil:D
        \box_use:N \l__wstf_r_box
      }
    \box_gset_ht:Nn \g__wstf_window_box
      { \box_ht:N \l__wstf_l_box }
  }
\cs_new_protected_nopar:Npn \__wstf_build_column_strict_auxiv:
  {
    \__wstf_repack_left_box:
    \hbox_gset_to_wd:Nnn \g__wstf_window_box
      { \l__wstf_line_dim }
      {
        \box_use:N \l__wstf_l_box
        \tex_hfil:D
        \box_move_up:nn
          { \box_ht:N \l__wstf_l_box - \box_ht:N \l__wstf_r_box }
          { \box_use_drop:N \l__wstf_r_box }
      }
  }
\cs_new_protected_nopar:Npn \__wstf_repack_left_box:
  {
    \dim_gset:Nn \g__wstf_ht_dim { \box_ht:N \l__wstf_l_box }
    \vbox_set:Nn \l__wstf_l_box
      { \vbox_unpack_drop:N \l__wstf_l_box }
  }
\box_new:N \g__wstf_window_box
\bool_new:N \l__wstf_first_move_bool

\__wstf_build_box:
\bool_new:N \l__wstf_column_bool
\__wstf_build_column:
\cs_new_eq:NN \__wstf_build_column: \__wstf_build_column_strict:
\cs_new_eq:NN \__wstf_build_box:    \__wstf_build_column:

\__wstf_build_hang:
\cs_new_protected_nopar:Npn \__wstf_build_hang:
  {
    \bool_if:NTF \g__wstf_hangfrom_bool
      { \__wstf_build_hangfrom: }
      {
        \vbox_set_top:Nn \l__wstf_window_box
          { \vbox_unpack:N \l__wstf_body_box }
        \dim_gset:Nn \g__wstf_ht_dim { \box_ht:N \l__wstf_window_box }
      }
    \box_set_eq_drop:NN \l__wstf_window_box \l__wstf_body_box
    \bool_if:NT \l__wstf_attach_equation_bool
      { \__wstf_build_hang_attach: }
    \dim_compare:nNnT \g__wstf_column_room_dim > \c_zero_dim
      { \__wstf_build_hang_move: }
  }
\cs_new_protected_nopar:Npn \__wstf_build_hang_attach:
  {
    \dim_compare:nNnTF \l__wstf_r_dim = \c_zero_dim
      { \__wstf_attach_left:N  \l__wstf_window_box }
      { \__wstf_attach_right:N \l__wstf_window_box }
  }
\cs_new_protected_nopar:Npn \__wstf_build_hang_move:
  {
    \dim_set:Nn \l__wstf_shift_dim
      {
        \dim_max:nn
          { \box_ht:N \l__wstf_window_box }
          { \tex_baselineskip:D * \g__wstf_line_int }
        + \box_ht_plus_dp:N \g__wstf_equation_box
        + \tex_parskip:D
      }
    \dim_gsub:Nn \g__wstf_column_room_dim { \l__wstf_shift_dim }
    \dim_compare:nNnTF \g__wstf_column_room_dim > \c_zero_dim
      {
        \box_if_empty:NTF \l__wstf_bottom_box
          { \bool_if:NT \g__wstf_right_move_bool { \__wstf_set_next_hang: } }
```

```
      }
      { \use:n }
      {
        \bool_gset_false:N \g__wstf_move_hang_bool
        \bool_gset_false:N \g__wstf_right_move_bool
      }
  }
\cs_new_protected_nopar:Npn \__wstf_set_next_hang:
  {
    \bool_if:NF \g__wstf_move_hang_bool
      {
        \bool_gset_true:N \g__wstf_move_hang_bool
        \dim_gset_eq:NN \g__wstf_hang_ht_dim \g__wstf_remaining_dim
      }
    \dim_gsub:Nn \g__wstf_hang_ht_dim { \l__wstf_shift_dim }
    \__wstf_column_right_move_set:nn
      { \g__wstf_hang_ht_dim }
      { \g__wstf_column_room_dim }
    \int_gzero:N \g__wstf_window_int
  }
\__wstf_build_hangfrom:
\cs_new_protected_nopar:Npn \__wstf_build_hangfrom:
  {
    \group_begin:
      \vbox_gset:Nn \g__wstf_window_box
        {
          \__wstf_break:
          \vbox_unpack:N \l__wstf_body_box
        }
      \__wstf_split_parameter:
      \vbox_set_split_to_ht:NNn \l__wstf_last_box \g__wstf_window_box
        { \c_zero_dim }
      \dim_gset:Nn \g__wstf_ht_dim
        {
            \g__wstf_baseline_skip
          - \g__wstf_prevdepth_dim
          - \box_ht:N \l__wstf_body_box
          + \box_ht:N \g__wstf_window_box
        }
    \group_end:
    \box_set_eq_drop:NN \l__wstf_body_box \g__wstf_window_box
  }

\__wstf_put_box:
\cs_new_protected_nopar:Npn \__wstf_put_box:
  {
    \__wstf_para_raw_end:
    \dim_compare:nNnTF \g__wstf_prevdepth_dim > \c__wstf_ignore_depth_dim
      { \__wstf_add_vskip: }
      { \__wstf_set_vskip: }
    \skip_set_eq:NN \l__wstf_par_skip \tex_parskip:D
    \skip_zero:N \tex_parskip:D
    \dim_set:Nn \l__wstf_window_ht_dim
      { \box_ht_plus_dp:N \l__wstf_window_box }
    \bool_if:NTF \g__wstf_right_move_bool
      { \__wstf_put_box_aux: }
      {
        \box_if_empty:NTF \l__wstf_bottom_box
          { \__wstf_put_next_test: }
          { \__wstf_put_box_aux: }
      }
  }
\dim_new:N \l__wstf_window_ht_dim
\skip_new:N \l__wstf_par_skip
\cs_new_protected_nopar:Npn \__wstf_put_next_test:
  {
    \box_if_empty:NF \g__wstf_equation_box
      {
```

```
        \dim_add:Nn \l__wstf_window_ht_dim
          { \box_ht_plus_dp:N \g__wstf_equation_box + \g__wstf_pos_skip }
      }
    \dim_compare:nNnTF
      { \g__wstf_remaining_dim + \g__wstf_pos_skip } > \l__wstf_window_ht_dim
      { \__wstf_set_next: }
      { \__wstf_put_box_aux: }
  }
\cs_new_protected_nopar:Npn \__wstf_put_box_aux:
  {
    \__wstf_output_window_box:
    \box_if_empty:NTF \l__wstf_bottom_box
      { \__wstf_put_trailer_box: }
      { \__wstf_put_bottom_box: }
  }
\cs_new_protected_nopar:Npn \__wstf_put_trailer_box:
  {
    \bool_if:NTF \g__wstf_next_hang_bool
      {
        \__wstf_next_hang_para:
        \__wstf_next_para_trailer:
      }
      {
        \bool_if:NTF \g__wstf_right_move_bool
          { \__wstf_next_para_trailer: }
          {
            \__wstf_add_pos_kludge:
            \__wstf_put_pos_box:
            \__wstf_clear_variable:
          }
      }
  }
\cs_new_protected_nopar:Npn \__wstf_put_bottom_box:
  {
    \__wstf_para_raw_end:
    \para_raw_noindent:
    \hbox_unpack_drop:N \l__wstf_bottom_box
    \box_if_empty:NF \g__wstf_equation_box
      { \__wstf_insert_equation: }
    \__wstf_put_pos_box:
    \__wstf_clear_variable:
  }
\cs_new_protected_nopar:Npn \__wstf_output_window_box:
  {
    \__wstf_hbox:n
      {
        \__wstf_put_window_box:
        \bool_if:NF \g__wstf_next_bool
          { \__wstf_output_stuff_box: }
      }
  }
\cs_new_protected_nopar:Npn \__wstf_put_pos_box:
  {
    \box_if_empty:NF \g__wstf_pos_box
      { \__wstf_output_pos_box: }
  }
\cs_new_protected_nopar:Npn \__wstf_output_pos_box:
  {
    \__wstf_if_last_none:F
      { \__wstf_output_pos_box_aux: }
    \hbox_unpack_drop:N \g__wstf_pos_box
  }
\cs_new_protected_nopar:Npn \__wstf_output_pos_box_aux:
  {
    \__wstf_para_raw_end:
    \bool_if:NT \g__wstf_equation_dp_bool
      { \__wstf_set_equation_depth: }
```

```
    \para_raw_noindent:
  }
\cs_new_protected:Npn \__wstf_hbox:n #1
  {
    \para_raw_noindent:
    \hbox_gset:Nn \g__wstf_last_box {#1}
    \box_gset_wd:Nn \g__wstf_last_box { \l__wstf_line_dim }
    \box_use_drop:N \g__wstf_last_box
  }
\cs_new_protected_nopar:Npn \__wstf_put_window_box:
  {
    \dim_compare:nNnF \l__wstf_l_dim > \c_zero_dim
      { \skip_horizontal:n { \l__wstf_line_dim - \l__wstf_r_dim } }
    \box_use:N \l__wstf_window_box
  }
\cs_new_protected_nopar:Npn \__wstf_output_stuff_box:
  {
    \hbox_gset:Nn \g__wstf_stuff_box
      {
        \__wstf_parshape_kern:
        \box_move_up:nn
          {
              \box_dp:N \g__wstf_stuff_box
            + \box_ht:N \l__wstf_window_box
            - (   \l__wstf_window_ht_dim
                + \box_ht_plus_dp:N \g__wstf_stuff_box ) / 2
            + \l__wstf_voffset_dim
          }
          { \box_use_drop:N \g__wstf_stuff_box }
      }
    \box_gset_ht:Nn \g__wstf_stuff_box { \c_zero_dim }
    \box_gset_dp:Nn \g__wstf_stuff_box { \c_zero_dim }
    \skip_horizontal:n
      {
        \dim_compare:nNnTF \l__wstf_r_dim > \c_zero_dim
          {
            \dim_compare:nNnTF
              { \box_wd:N \l__wstf_window_box }
              <
              { \l__wstf_window_dim }
              { \l__wstf_leftsep_dim }
              {
                - \l__wstf_r_dim
                - \l__wstf_rightsep_dim
                - \g__wstf_stuff_wd_dim
              }
          }
          { \l__wstf_leftsep_dim }
      }
    \box_use_drop:N \g__wstf_stuff_box
  }
\__wstf_add_vskip:
\cs_new_protected_nopar:Npn \__wstf_add_vskip:
  {
    \box_if_empty:NTF \g__wstf_display_box
      { \__wstf_add_vskip_auxi: }
      { \__wstf_add_vskip_display: }
  }
\cs_new_protected_nopar:Npn \__wstf_add_vskip_display:
  {
    \bool_set_true:N \l__wstf_display_pre_bool
    \vbox_unpack_drop:N \g__wstf_display_box
    \__wstf_ignore_depth:
  }
\cs_new_protected_nopar:Npn \__wstf_add_vskip_auxi:
  {
    \dim_compare:nNnTF \tex_pagegoal:D < \c_max_dim
      { \__wstf_add_vskip_auxii: }
```

```
      {
        \bool_if:NTF \g__wstf_next_bool
          { \__wstf_add_vskip_auxii: }
          { \__wstf_add_vskip_auxiii: }
      }
  }
\cs_new_protected_nopar:Npn \__wstf_add_vskip_auxii:
  {
    \__wstf_add_vskip_auxiv:
    \bool_if:NTF \l__wstf_first_move_bool
      { \__wstf_first_move_skip: }
      { \skip_vertical:N \g__wstf_pre_skip }
    \__wstf_ignore_depth:
  }
\cs_new_protected_nopar:Npn \__wstf_add_vskip_auxiii:
  {
    \__wstf_add_vskip_auxiv:
    \skip_vertical:N \g__wstf_pre_skip
    \dim_compare:nNnTF \tex_topskip:D > \g__wstf_ht_dim
      {
        \skip_sub:Nn \tex_topskip:D { \g__wstf_ht_dim }
        \tex_hrule:D height \c_zero_dim \scan_stop:
      }
      { \__wstf_ignore_depth: }
  }
\cs_new_protected_nopar:Npn \__wstf_add_vskip_auxiv:
  {
    \skip_gset:Nn \g__wstf_pre_skip
      {
          \g__wstf_baseline_skip
        - \g__wstf_prevdepth_dim
        - \g__wstf_ht_dim
      }
    \dim_compare:nNnT \g__wstf_pre_skip < \tex_lineskiplimit:D
      { \skip_gset_eq:NN \g__wstf_pre_skip \tex_lineskip:D }
  }
\cs_new_protected_nopar:Npn \__wstf_first_move_skip:
  {
    \skip_vertical:n
      {
          \g__wstf_first_sep_dim
        - \g__wstf_window_ht_dim
        - \tex_parskip:D
        \dim_compare:nNnT \g__wstf_column_ht_dim > \c_zero_dim
          { + \g__wstf_column_ht_dim + \g__wstf_pre_skip }
      }
  }
\skip_new:N \g__wstf_pre_skip
\bool_new:N \l__wstf_display_pre_bool

\__wstf_set_vskip:
\cs_new_protected_nopar:Npn \__wstf_set_vskip:
  {
    \box_if_empty:NTF \g__wstf_display_box
      {
        \skip_gset:Nn \g__wstf_pre_skip
          { \g__wstf_baseline_skip - \g__wstf_ht_dim }
      }
      { \__wstf_add_vskip_display: }
  }

\__wstf_ignore_depth:
\__wstf_set_prevdepth:N
\cs_new_protected_nopar:Npn \__wstf_ignore_depth:
  { \dim_set_eq:NN \tex_prevdepth:D \c__wstf_ignore_depth_dim }
\cs_new_protected_nopar:Npn \__wstf_set_prevdepth:N
  { \dim_set_eq:NN \tex_prevdepth:D }
\dim_const:Nn \c__wstf_ignore_depth_dim { -1000pt }

\__wstf_set_next:
\cs_new_protected_nopar:Npn \__wstf_set_next:
  {
```

```
    \dim_set:Nn \l__wstf_height_dim
      {
        \bool_if:NT \g__wstf_next_bool { \l__wstf_par_skip }
        + \g__wstf_pre_skip
        + \l__wstf_window_ht_dim
      }
    \dim_gadd:Nn \g__wstf_total_ht_dim { \l__wstf_height_dim }
    \dim_set:Nn \l__wstf_shift_dim
      { \g__wstf_remaining_dim - \l__wstf_height_dim }
    \dim_compare:nNnTF
      { - \l__wstf_shift_dim } < \l__wstf_min_dim
      { \__wstf_set_next_para: }
      { \__wstf_set_next_output: }
  }
\cs_new_protected_nopar:Npn \__wstf_set_next_para:
  {
    \int_gset:Nn \g__wstf_window_int
      {
        \dim_compare:nNnTF \l__wstf_shift_dim > \c_zero_dim
          { \__wstf_unit:n { \l__wstf_shift_dim } }
          { \c_one_int }
      }
    \__wstf_set_next_verify:
    \__wstf_output_window_box:
    \__wstf_make_next_stuff:nn
      { \g__wstf_stuff_wd_dim }
      { \l__wstf_shift_dim }
    \int_gzero:N \g__wstf_top_int
    \__wstf_next_para_trailer:
  }
\cs_new_protected_nopar:Npn \__wstf_set_next_output:
  {
    \__wstf_output_window_box:
    \__wstf_add_pos_kludge:
    \__wstf_put_pos_box:
    \__wstf_clear_variable:
  }
\cs_new_protected_nopar:Npn \__wstf_set_next_verify:
  {
    \dim_set:Nn \l__wstf_height_dim
      { \g__wstf_window_ht_dim - \g__wstf_total_ht_dim - \l__wstf_min_dim }
    \dim_while_do:nNnn
      { \tex_baselineskip:D * \g__wstf_window_int + \l__wstf_par_skip }
      <
      { \l__wstf_height_dim }
      { \int_gincr:N \g__wstf_window_int }
    \bool_if:NF \g__wstf_next_bool
      {
        \dim_add:Nn \l__wstf_window_ht_dim
          { \tex_baselineskip:D * \g__wstf_window_int + \l__wstf_par_skip }
      }
  }
\__wstf_next_para_trailer:
\cs_new_protected_nopar:Npn \__wstf_next_para_trailer:
  {
    \__wstf_add_pos_kludge:
    \box_if_empty:NTF \g__wstf_pos_box
      { \__wstf_next_para: }
      {
        \__wstf_env_begin:
          \hbox_unpack_drop:N \g__wstf_pos_box
        \__wstf_env_end:
      }
  }
\__wstf_make_next_stuff:nn
\cs_new_protected:Npn \__wstf_make_next_stuff:nn #1#2
  {
    \bool_gset_true:N \g__wstf_next_bool
```

```
    \dim_gset:Nn \g__wstf_stuff_wd_dim  {#1}
    \dim_gset:Nn \g__wstf_remaining_dim {#2}
  }
\__wstf_extract_hbox:NN
\cs_new_protected:Npn \__wstf_extract_display_hbox:NN #1
  {
    \box_gclear:N \g__wstf_pos_box
    \vbox_set:Nn #1
      {
        \vbox_unpack_drop:N #1
        \bool_if:NTF \g__wstf_display_bool
          { \__wstf_test_display_math: }
          { \box_gclear:N \g__wstf_display_box }
        \box_if_empty:NTF \g__wstf_display_box
          {
            \bool_gset_false:N \g__wstf_amsmath_bool
            \__wstf_extract_last_hbox:N \g__wstf_last_box
          }
          { \box_gclear:N \g__wstf_last_box }
      }
    \box_if_empty:NF \g__wstf_display_box
      { \dim_gset:Nn \g__wstf_display_pre_dim { \box_dp:N #1 } }
    \__wstf_extract_hbox_aux:N
  }
\cs_new_protected:Npn \__wstf_extract_hbox:NN #1
  {
    \vbox_set:Nn #1
      {
        \vbox_unpack_drop:N #1
        \__wstf_extract_last_hbox:N \g__wstf_last_box
      }
    \__wstf_extract_hbox_aux:N
  }
\cs_new_protected:Npn \__wstf_extract_hbox_aux:N #1
  {
    \box_if_empty:NTF \g__wstf_last_box
      { \box_clear:N #1 }
      { \__wstf_repack_hbox:N #1 }
  }
\cs_new_protected:Npn \__wstf_repack_hbox:N #1
  {
    \hbox_set:Nn #1
      {
        \skip_if_eq:nnF
          { \g__wstf_main_left_skip } { \c_zero_skip }
          { \skip_horizontal:N \g__wstf_main_left_skip }
        \hbox_unpack_drop:N \g__wstf_last_box
        \tex_unskip:D \tex_unskip:D \tex_unpenalty:D
      }
  }
\cs_new_protected:Npn \__wstf_extract_last_hbox:N #1
  {
    \__wstf_if_last_hlist:TF
      {
        \box_gset_to_last:N #1
        \tex_unskip:D
      }
      { \box_gclear:N #1 }
  }
\box_new:N \g__wstf_last_box
\box_new:N \g__wstf_display_box
\dim_new:N \g__wstf_display_pre_dim
\__wstf_test_display_math:
\cs_new_protected_nopar:Npn \__wstf_test_display_math:
  {
    \__wstf_if_last_hlist:T { \__wstf_extract_pos_hbox: }
    \box_clear:N \l__wstf_add_box
    \box_gclear:N \g__wstf_display_box
```

```
    \skip_gzero:N \g__wstf_last_skip
    \skip_gzero:N \g__wstf_display_pre_skip
    \bool_gset_false:N \g__wstf_amsmath_bool
    \__wstf_add_last_skip:w
    \__wstf_add_last_penalty:w
    \__wstf_add_last_box:w
    \__wstf_add_last_skip:w
    \__wstf_add_last_skip:w
    \__wstf_add_last_penalty:w
    \__wstf_add_last_finalise:w \s_stop
  }
\cs_new_protected_nopar:Npn \__wstf_extract_pos_hbox:
  {
    \box_gset_to_last:N \g__wstf_last_box
    \__wstf_repack_hbox:N \l__wstf_last_box
    \box_gset_eq_drop:NN \g__wstf_pos_box \l__wstf_last_box
    \tex_unskip:D
  }
\box_new:N \l__wstf_add_box
\box_new:N \g__wstf_pos_box
\cs_new_protected_nopar:Npn \__wstf_add_last_stop:w
  {
    \vbox_unpack_drop:N \l__wstf_add_box
    \use_none_delimit_by_s_stop:w
  }
\cs_new_protected_nopar:Npn \__wstf_add_last_skip:w
  {
    \__wstf_if_last_glue:TF
      {
        \skip_set_eq:NN \l__wstf_last_skip \tex_lastskip:D
        \vbox_set:Nn \l__wstf_add_box
          {
            \skip_vertical:N \l__wstf_last_skip
            \vbox_unpack_drop:N \l__wstf_add_box
          }
        \tex_unskip:D
        \skip_gadd:Nn \g__wstf_last_skip { \l__wstf_last_skip }
      }
      { \__wstf_skip_stop:w }
  }
\skip_new:N \l__wstf_last_skip
\skip_new:N \g__wstf_last_skip
\cs_new_eq:NN \__wstf_skip_stop:w \__wstf_add_last_stop:w
\cs_new_protected_nopar:Npn \__wstf_add_last_penalty:w
  {
    \__wstf_if_last_penalty:TF
      {
        \int_set_eq:NN \l__wstf_last_int \tex_lastpenalty:D
        \vbox_set:Nn \l__wstf_add_box
          {
            \tex_penalty:D \l__wstf_last_int
            \vbox_unpack_drop:N \l__wstf_add_box
          }
        \tex_unpenalty:D
        \skip_gset_eq:NN \g__wstf_pre_skip \g__wstf_last_skip
        \skip_gzero:N \g__wstf_last_skip
      }
      { \__wstf_penalty_stop:w }
  }
\int_new:N \l__wstf_last_int
\cs_new_eq:NN \__wstf_penalty_stop:w \__wstf_add_last_stop:w
\cs_new_protected_nopar:Npn \__wstf_add_last_box:w
  {
    \__wstf_if_last_hlist:TF
```

```
      {
        \skip_gzero:N \g__wstf_last_skip
        \box_set_to_last:N \l__wstf_last_box
        \vbox_set:Nn \l__wstf_add_box
          {
            \box_use_drop:N \l__wstf_last_box
            \vbox_unpack_drop:N \l__wstf_add_box
          }
      }
      { \__wstf_box_stop:w }
  }
\box_new:N \l__wstf_last_box
\cs_new_eq:NN \__wstf_box_stop:w \__wstf_add_last_stop:w
```

__wstf_add_last_finalise:w

```
\cs_new_protected_nopar:Npn \__wstf_add_last_finalise:w
  {
    \int_gset_eq:NN \g__wstf_display_pre_int \l__wstf_last_int
    \skip_gadd:Nn \g__wstf_display_pre_skip { \g__wstf_pre_skip }
    \int_case:nnTF { \tex_lastnodetype:D }
      {
        { \c__wstf_hlist_node }   { }
        { \c__wstf_none_node }    { }
        { \c__wstf_whatsit_node } { }
      }
      { \box_gset_eq_drop:NN \g__wstf_display_box \l__wstf_add_box }
      { \vbox_unpack_drop:N \l__wstf_add_box }
    \use_none_delimit_by_s_stop:w
  }
\int_new:N \g__wstf_display_pre_int
\skip_new:N \g__wstf_display_pre_skip
```

__wstf_amsmath_boot:w
__wstf_amsmath_recursion:w
__wstf_amsmath_multline:w

amsmath 的 `align` 等数学环境内部是一个 `\halign` 环境，结构不一样，需要另外处理。

```
\cs_new_protected_nopar:Npn \__wstf_amsmath_boot:w
  {
    \__wstf_add_last_skip:w
    \__wstf_add_last_penalty:w
    \cs_set_eq:NN \__wstf_box_stop:w \__wstf_add_last_stop:w
    \__wstf_add_last_box:w
    \bool_gset_true:N \g__wstf_amsmath_bool
    \cs_set_eq:NN \__wstf_skip_stop:w \__wstf_amsmath_multline:w
    \cs_set_eq:NN \__wstf_penalty_stop:w \__wstf_amsmath_stop:NN
    \__wstf_amsmath_recursion:w
  }
\cs_new_protected_nopar:Npn \__wstf_amsmath_recursion:w
  {
    \__wstf_add_last_skip:w
    \__wstf_add_last_skip:w
    \__wstf_add_last_penalty:w
    \__wstf_add_last_box:w
    \__wstf_amsmath_recursion:w
  }
\cs_new_protected:Npn \__wstf_amsmath_stop:NN #1#2
  {
    \cs_set_eq:NN \__wstf_skip_stop:w \__wstf_add_last_stop:w
    \cs_set_eq:NN \__wstf_penalty_stop:w \__wstf_add_last_stop:w
  }
\bool_new:N \g__wstf_amsmath_bool
```

__wstf_amsmath_multline:w

`multline` 环境的结构与其他环境不一样。amsmath 的 `\@display@init` 定义为

```
\def\@display@init#1{%
    \global\dt@ptrue \spread@equation
    \everycr{%
        \noalign{%
            #1%
            \ifdt@p
                \global\dt@pfalse
                \vskip-\lineskiplimit
```

```
                \vskip\normallineskiplimit
            \else
                \penalty\@eqpen \global\dspbrk@lvl\m@ne
            \fi
        }%
    }%
}
```

align 等环境的开头 \ifdt@p 为真，会插入两个 \vskip，但是 multline 定义中的 \mmeasure@ 没有重定义 \everycr，上述定义中的 \dt@pfalse 被执行，导致环境开头被加入了 \penalty，不确定是有意为之还是疏忽[1]。

```
\cs_new_protected_nopar:Npn \__wstf_amsmath_multline:w
  {
    \__wstf_amsmath_stop:NN ? ?
    \__wstf_add_last_penalty:w
    \skip_gset_eq:NN \g__wstf_display_pre_skip
                     \g__wstf_pre_skip
    \__wstf_add_last_skip:w
    \__wstf_add_last_penalty:w
    \__wstf_add_last_finalise:w
  }
```

__wstf_amsmath_leqno:

amsmath 的 leqno 是直接用 \tex_leqno:D 实现的，与 LaTeX 的实现不一样。

```
\cs_new_protected_nopar:Npn \__wstf_amsmath_leqno:
  {
    \legacy_if:nTF { tagsleft@ }
      { \bool_gset_true:N  \g__wstf_leqno_bool }
      { \bool_gset_false:N \g__wstf_leqno_bool }
  }

\__wstf_package_hook:nn { amsmath }
  {
    \cs_gset_eq:NN \__wstf_box_stop:w
                   \__wstf_amsmath_boot:w
    \cs_gset_eq:NN \__wstf_test_leqno:
                   \__wstf_amsmath_leqno:
  }
```

__wstf_set_float:

```
\cs_new_protected_nopar:Npn \__wstf_set_float:
  {
    \cs_set_eq:NN \@captype \l__wstf_type_tl
    \__wstf_float_pre_hook:
    \__wstf_caption_hook:
    \@floatboxreset
  }
```

__wstf_float_pre_hook:
__wstf_float_pos_hook:

```
\cs_new_eq:NN \__wstf_float_pre_hook: \__wstf_empty:
\cs_new_eq:NN \__wstf_float_pos_hook: \__wstf_empty:
\__wstf_package_hook:nn { float }
  {
    \bool_new:N \g__wstf_float_pos_bool
    \cs_gset_protected_nopar:Npn \__wstf_float_pre_hook:
      { \exp_args:No \__wstf_float_pre_aux:n { \l__wstf_type_tl } }
    \cs_new_protected:Npn \__wstf_float_pre_aux:n #1
      {
        \cs_if_exist_use:cTF { fst@ #1 }
          {
            \@float@setevery {#1}
            \bool_gset_true:N \g__wstf_float_pos_bool
          }
          { \bool_gset_false:N \g__wstf_float_pos_bool }
      }
    \cs_gset_protected_nopar:Npn \__wstf_float_pos_hook:
      {
        \bool_if:NT \g__wstf_float_pos_bool
```

[1] https://github.com/latex3/latex2e/issues/793

```
          { \exp_args:No \__wstf_float_pos_aux:n { \l__wstf_type_tl } }
      }
    \cs_new_protected:Npn \__wstf_float_pos_aux:n #1
      {
        \hbox_gset:Nn \g__wstf_stuff_box
          {
            \use:c { fst@ #1 }
            \cs_set_eq:NN \@currbox \g__wstf_stuff_box
            \vbox_gset:Nn \g__wstf_stuff_box
              { \box_use_drop:N \g__wstf_stuff_box }
            \exp_args:Ne \float@makebox
              { \dim_eval:n { \box_wd:N \g__wstf_stuff_box } }
          }
      }
  }
\cs_new_eq:NN \__wstf_floatrow_hook: \__wstf_empty:
\__wstf_package_hook:nn { floatrow }
  {
    \cs_gset_protected_nopar:Npn \__wstf_floatrow_hook:
      {
        \cs_set_eq:NN \@captype \l__wstf_type_tl
        \killfloatstyle
        \FR@redefs
        \dim_zero:N \FBc@wd
        \exp_args:Ne \flrow@setlist
          {
            { \l__wstf_type_tl }
            { wrapfloat }
            { wrap \l__wstf_type_tl }
          }
        \FRifFBOX \@@setframe \relax \@@FStrue
        \hbox_gset:Nw \g__wstf_stuff_box
          \tl_set:Nx \FBB@wd { \dim_use:N \l__wstf_width_dim }
          \FB@fs@wd
          \dim_set:Nn \l__wstf_width_dim { \FBo@wd }
      }
    \cs_gset_protected_nopar:Npn \__wstf_float_pre_hook:
      { \the \FR@everyfloat }
    \cs_gset_protected_nopar:Npn \__wstf_float_pos_hook:
      {
        \legacy_if:nTF { FBbuild }
          {
            \cs_set_eq:NN \@currbox \g__wstf_stuff_box
            \vbox_gset:Nn \g__wstf_stuff_box
              { \box_use_drop:N \g__wstf_stuff_box }
            \flrow@FB { \l__wstf_width_dim }
          }
          {
            \cs_undefine:N \flrow@typ@tmpset
            \box_use_drop:N \g__wstf_stuff_box
          }
        \hbox_gset_end:
      }
  }
\cs_new_eq:NN \__wstf_caption_hook: \__wstf_empty:
\__wstf_package_hook:nn { caption }
  {
    \cs_gset_protected_nopar:Npn \__wstf_caption_hook:
      { \exp_args:No \__wstf_caption_aux:n { \l__wstf_type_tl } }
    \cs_new_protected:Npn \__wstf_caption_aux:n #1
      {
        \caption@settype {#1}
        \caption@clearmargin
        \caption@setoptions { wrap #1 }
      }
  }
```

__wstf_floatrow_hook:

__wstf_caption_hook:

```
top 2356 \keys_define:nn { wrapstuff }
    2357   {
    2358     abovesep    .tl_set:N = \l__wstf_abovesep_tl ,
    2359     belowsep    .tl_set:N = \l__wstf_belowsep_tl ,
    2360     leftsep     .tl_set:N = \l__wstf_leftsep_tl ,
    2361     rightsep    .tl_set:N = \l__wstf_rightsep_tl ,
    2362     linewidth   .tl_set:N = \l__wstf_linewidth_tl ,
    2363     lines       .tl_set:N = \l__wstf_lines_tl ,
    2364     width       .tl_set:N = \l__wstf_width_tl ,
    2365     height      .tl_set:N = \l__wstf_height_tl ,
    2366     hoffset     .tl_set:N = \l__wstf_hoffset_tl ,
    2367     voffset     .tl_set:N = \l__wstf_voffset_tl ,
    2368     type        .tl_set:N = \l__wstf_type_tl ,
    2369     ratio       .fp_set:N = \l__wstf_ratio_fp ,
    2370     top        .int_set:N = \l__wstf_top_int ,
    2371     i             .code:n = \__wstf_swap_true:N \c_true_bool ,
    2372     o             .code:n = \__wstf_swap_true:N \c_false_bool ,
    2373     l             .code:n = \__wstf_swap_false:N \c_zero_fp ,
    2374     r             .code:n = \__wstf_swap_false:N \c_one_fp ,
    2375     c             .code:n = \__wstf_swap_false:N \c__wstf_c_fp ,
    2376     column      .choice: ,
    2377     column/true  .code:n =
    2378       {
    2379         \bool_set_true:N \l__wstf_column_bool
    2380         \cs_set_eq:NN \__wstf_build_column:
    2381                       \__wstf_build_column_strict:
    2382       } ,
    2383     column/par   .code:n =
    2384       {
    2385         \bool_set_true:N \l__wstf_column_bool
    2386         \cs_set_eq:NN \__wstf_build_column:
    2387                       \__wstf_build_column_fuzzy:
    2388       } ,
    2389     column/false .code:n =
    2390       { \bool_set_false:N \l__wstf_column_bool } ,
    2391     hsep         .code:n =
    2392       {
    2393         \tl_set:Nn \l__wstf_leftsep_tl {#1}
    2394         \tl_set_eq:NN \l__wstf_rightsep_tl
    2395                       \l__wstf_leftsep_tl
    2396       } ,
    2397     vsep         .code:n =
    2398       {
    2399         \tl_set:Nn \l__wstf_abovesep_tl {#1}
    2400         \tl_set_eq:NN \l__wstf_belowsep_tl
    2401                       \l__wstf_abovesep_tl
    2402       } ,
    2403     unknown      .code:n =
    2404       { \exp_args:No \__wstf_unknown_key:n { \l_keys_key_str } } ,
    2405     leftsep     .groups:n = main ,
    2406     rightsep    .groups:n = main ,
    2407     hsep        .groups:n = main ,
    2408     linewidth   .groups:n = main ,
    2409     lines       .groups:n = main ,
    2410     column      .groups:n = main ,
    2411     hoffset     .groups:n = main ,
    2412     voffset     .groups:n = main ,
    2413     top         .groups:n = stuff ,
    2414     abovesep    .groups:n = stuff ,
    2415     belowsep    .groups:n = stuff ,
    2416     vsep        .groups:n = stuff ,
    2417     width       .groups:n = stuff ,
    2418     height      .groups:n = stuff ,
    2419     float       .groups:n = stuff ,
    2420     ratio       .groups:n = ratio ,
    2421     l           .groups:n = ratio ,
    2422     r           .groups:n = ratio ,
```

```
    c          .groups:n = ratio ,
    i          .groups:n = ratio ,
    o          .groups:n = ratio ,
    column    .default:n = true ,
    column    .initial:n = true ,
    abovesep  .initial:n = \c_zero_dim ,
    belowsep  .initial:n = \c_zero_dim ,
    leftsep   .initial:n = 1em ,
    rightsep  .initial:n = 1em ,
    linewidth .initial:n = \linewidth ,
    hoffset   .initial:n = \c_zero_dim ,
    voffset   .initial:n = \c_zero_dim ,
    width     .initial:n = \c_zero_dim ,
    height    .initial:n = \c_zero_dim ,
    ratio     .initial:n = \c_one_fp ,
    abovesep  .value_required:n = true ,
    belowsep  .value_required:n = true ,
    leftsep   .value_required:n = true ,
    rightsep  .value_required:n = true ,
    linewidth .value_required:n = true ,
    width     .value_required:n = true ,
    height    .value_required:n = true ,
    hoffset   .value_required:n = true ,
    voffset   .value_required:n = true ,
    hsep      .value_required:n = true ,
    vsep      .value_required:n = true ,
    l        .value_forbidden:n = true ,
    r        .value_forbidden:n = true ,
    c        .value_forbidden:n = true ,
    i        .value_forbidden:n = true ,
    o        .value_forbidden:n = true
  }
\fp_const:Nn \c__wstf_c_fp { 0.5 }
\cs_new_protected:Npn \__wstf_swap_true:N #1
  {
    \bool_set_true:N \l__wstf_swap_bool
    \bool_set_eq:NN \l__wstf_inner_bool #1
    \bool_if:NTF \l__wstf_inner_bool
      { \bool_set_false:N \l__wstf_outer_bool }
      { \bool_set_true:N  \l__wstf_outer_bool }
  }
\cs_new_protected_nopar:Npn \__wstf_swap_false:N
  {
    \bool_set_false:N \l__wstf_swap_bool
    \fp_set_eq:NN \l__wstf_ratio_fp
  }
\cs_new_protected:Npn \__wstf_unknown_key:n #1
  {
    \regex_match:NnTF \c__wstf_integer_regex {#1}
      { \int_set:Nn \l__wstf_top_int }
      { \__wstf_unknown_key_error:n }
      {#1}
  }
\regex_const:Nn \c__wstf_integer_regex { \A \d+ \Z }
\cs_new_protected_nopar:Npn \__wstf_unknown_key_error:n
  { \msg_error:nnn { wstf } { unknown-key } }
\msg_new:nnnn { wstf } { unknown-key }
  { The~key~"#1"~is~unknown~and~is~being~ignored. }
  {
    The~package~wrapstuff~does~not~have~a~key~called~"#1".\\
    Check~that~you~have~spelled~the~key~name~correctly.
  }
\NewDocumentCommand \wrapstuffset { m }
  { \keys_set:nn { wrapstuff } {#1} }
```

\wrapstuffclear 保险起见，加入 \par 结束段落，同时结束 wrapstuff@par 环境。

```
\NewDocumentCommand \wrapstuffclear { }
  {
    \par
    \__wstf_clear:
  }

\cs_if_exist:NTF \ProcessKeyOptions
  { \ProcessKeyOptions [ wrapstuff ] }
  {
    \RequirePackage { l3keys2e }
    \ProcessKeysOptions { wrapstuff }
  }

⟨/package⟩
```

版本历史

v0.1 (2022/07/05 – 2022/07/20)
General: 初始版本。 1
首次提交到 CTAN 发布。 1
v0.2 (2022/07/21 – 2022/07/26)
General: 改进对显示数学公式的处理。 19
改进放置方式。 1
兼容 \parbox 与 minipage 等使用环境。 6
提高稳定性。 24
修复 hoffset 选项。 13
优化重新编译警告。 9
v0.3 (2022/07/31)
General: 修复 stuff 深度不为零时的垂直对齐问题。 30

代码索引

意大利体的数字表示描述对应索引项的页码；带下划线的数字表示定义对应索引项的代码行号；罗马字体的数字表示使用对应索引项的代码行号。

Symbols

\\ 8, 19, 434, 2482

A

\A 2476
abovesep 2

B

\begin 310, 311, 519
belowsep 2
bool commands:
\bool_gset_false:N 90, 95, 704, 846, 1170, 1217, 1257, 1535, 1551, 1565, 1651, 1655, 1730, 1731, 2071, 2125, 2255, 2285
\bool_gset_true:N 94, 758, 858, 1179, 1249, 1511, 1514, 1528, 1529, 1545, 1546, 1604, 1605, 1738, 2056, 2222, 2254, 2283
\bool_if:NTF 93, 120, 216, 446, 497, 498, 561, 571, 646, 662, 671, 750, 873, 952, 1005, 1057, 1083, 1145, 1155, 1163, 1185, 1218, 1225, 1230, 1297, 1304, 1311, 1330, 1332, 1397, 1433, 1497, 1508, 1512, 1549, 1567, 1643, 1693, 1701, 1726, 1736, 1778, 1809, 1815, 1839, 1857, 1927, 1935, 1993, 2037, 2066, 2289, 2460
\bool_new:N 88, 503, 504, 505, 620, 771, 1061, 1062, 1212, 1260, 1687, 1688, 1974, 2240, 2275
\bool_set_eq:NN 2459
\bool_set_false:N . . . 639, 1269, 1554, 2390, 2461, 2466
\bool_set_true:N 623, 631, 951, 1055, 1552, 1918, 2379, 2385, 2458, 2462
\c_false_bool 2372
\c_true_bool 2371
box commands:
\box_clear:N 1040, 1267, 1270, 2092, 2121
\box_dp:N 134, 338, 358, 542, 917, 937, 1033, 1035, 1098, 1216, 1251, 1534, 1580, 1881, 2077
\box_gclear:N 116, 190, 1056, 1153, 2062, 2068, 2074, 2113, 2122
\box_gset_dp:Nn 344, 361, 1580, 1890
\box_gset_eq_drop:NN 1195, 1196, 1510, 2138, 2210
\box_gset_ht:Nn 266, 343, 1579, 1664, 1889
\box_gset_to_last:N . . . 185, 995, 1173, 1177, 2110, 2136
\box_gset_wd:Nn 978, 1188, 1865
\box_ht:N 266, 337, 688, 1017, 1019, 1032, 1034, 1415, 1416, 1438, 1445, 1579, 1598, 1634, 1635, 1665, 1676, 1682, 1698, 1717, 1762, 1763, 1882
\box_ht_plus_dp:N 299, 1454, 1455, 1572, 1573, 1590, 1591, 1599, 1600, 1618, 1619, 1719, 1777, 1793, 1884
\box_if_empty:NTF 126, 876, 885, 887, 955, 1222, 1234, 1268, 1377, 1388, 1430, 1460, 1491, 1494, 1725, 1781, 1790, 1803, 1829, 1845, 1912, 1977, 2046, 2069, 2076, 2091
\box_if_horizontal:NTF 1023
\box_move_right:nn 1100, 1126
\box_move_up:nn . . 334, 357, 1437, 1612, 1630, 1675, 1879
\box_new:N 223, 364, 605, 606, 892, 1207, 1208, 1209, 1273, 1421, 1422, 1484, 1485, 1686, 2115, 2116, 2141, 2142, 2198
\box_set_eq:NN 1025, 1263, 1478
\box_set_eq_drop:NN 911, 1006, 1194, 1448, 1462, 1463, 1476, 1477, 1503, 1700, 1766
\box_set_to_last:N 935, 1082, 1118, 2189
\box_use:N 176, 1435, 1610, 1614, 1628, 1637, 1660, 1662, 1673, 1872
\box_use_drop:N 136, 341, 359, 374, 1013, 1101, 1132, 1143, 1147, 1154, 1158, 1204, 1405, 1407, 1439, 1677, 1866, 1887, 1908, 2192, 2299, 2334, 2339
\box_wd:N 297, 906, 1189, 1201, 1202, 1896, 2301

C

c 2
column 2
cs commands:
\cs_gset_eq:NN 164, 167, 409, 512, 513, 514, 524, 525, 526, 527, 576, 577, 599, 600, 781, 783, 785, 786, 864, 1246, 1256, 2259, 2261
\cs_gset_protected_nopar:Npn 2276, 2287, 2308, 2326, 2328, 2347
\cs_if_exist:NTF 2492
\cs_if_exist_use:NTF 2280
\cs_new:Npn 394, 795, 797, 806

\cs_new_eq:NN 396, 531, 532, 533, 534, 788, 789, 862, 1689, 1690, 2165, 2183, 2199, 2271, 2272, 2305, 2344
\cs_new_protected:Npn 62, 70, 78, 86, 148, 157, 162, 171, 181, 259, 261, 265, 452, 457, 489, 650, 822, 1063, 1068, 1077, 1089, 1104, 1543, 1861, 2054, 2060, 2080, 2089, 2095, 2106, 2235, 2278, 2292, 2349, 2456, 2469
\cs_new_protected:Npx 383
\cs_new_protected_nopar:Npn 107, 113, 118, 130, 140, 193, 198, 206, 214, 226, 228, 263, 306, 315, 321, 323, 330, 346, 353, 368, 377, 397, 421, 430, 440, 462, 473, 484, 510, 516, 518, 520, 522, 529, 621, 629, 637, 660, 680, 692, 702, 712, 730, 740, 748, 754, 761, 766, 775, 808, 816, 824, 844, 853, 863, 865, 871, 880, 893, 903, 915, 923, 941, 949, 959, 986, 1003, 1021, 1053, 1139, 1151, 1160, 1166, 1183, 1192, 1213, 1244, 1254, 1261, 1274, 1293, 1328, 1337, 1347, 1355, 1357, 1361, 1370, 1384, 1395, 1401, 1410, 1423, 1442, 1450, 1468, 1473, 1486, 1505, 1526, 1531, 1563, 1582, 1623, 1641, 1653, 1667, 1680, 1691, 1706, 1712, 1734, 1747, 1768, 1788, 1800, 1807, 1824, 1834, 1843, 1848, 1854, 1868, 1874, 1910, 1916, 1922, 1932, 1940, 1951, 1962, 1975, 1984, 1986, 1989, 2005, 2021, 2028, 2043, 2118, 2134, 2143, 2148, 2166, 2184, 2200, 2216, 2227, 2241, 2251, 2264, 2464, 2477
\cs_set:Npn 237, 243
\cs_set_eq:NN 230, 627, 635, 647, 648, 655, 1418, 2220, 2223, 2224, 2237, 2238, 2266, 2297, 2310, 2332, 2380, 2386
\cs_undefine:N 168, 2338

D

\d 2476
dim commands:
\dim_add:Nn 657, 1018, 1792, 2039
\dim_compare:nNnTF 282, 287, 309, 327, 350, 694, 742, 744, 856, 906, 918, 1142, 1452, 1576, 1703, 1708, 1723, 1771, 1795, 1870, 1893, 1895, 1924, 1944, 1959, 1969, 2000, 2009
\dim_const:Nn 1988
\dim_eval:n .. 266, 658, 823, 1032, 1033, 1034, 1035, 2301
\dim_gadd:Nn 1997
\dim_gset:Nn 76, 296, 298, 683, 687, 717, 719, 917, 936, 1017, 1215, 1250, 1412, 1515, 1560, 1569, 1586, 1596, 1602, 1616, 1682, 1698, 1758, 2057, 2058, 2077
\dim_gset_eq:NN 300, 517, 689, 725, 727, 764, 1517, 1537, 1739
\dim_gsub:Nn 1533, 1722, 1741
\dim_gzero:N 74, 724, 1536
\dim_max:nn 1414, 1716
\dim_new:N 72, 365, 366, 367, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 774, 1420, 1786, 2117
\dim_set:Nn 279, 280, 349, 538, 539, 540, 541, 542, 546, 642, 644, 654, 1714, 1776, 1991, 1998, 2030, 2324
\dim_set_eq:NN 543, 563, 567, 626, 634, 759, 769, 859, 868, 1109, 1279, 1280, 1985, 1987
\dim_sub:Nn 544, 640, 652
\dim_to_decimal_in_unit:nn 802
\dim_to_fp:n 796
\dim_use:N 76, 1048, 1049, 1050, 1051, 2322
\dim_while_do:nNnn 2032
\dim_zero:N 625, 633, 1278, 2313
\c_max_dim 710, 856, 868, 906, 1279, 1280, 1326, 1924
\c_zero_dim 282, 287, 309, 327, 344, 350, 361, 694, 710, 742, 744, 918, 976, 1048, 1049, 1050, 1051, 1301, 1308, 1315, 1321, 1322, 1326, 1576, 1703, 1708, 1723, 1757, 1870, 1889, 1890, 1893, 1947, 1969, 2009, 2428, 2429, 2433, 2434, 2435, 2436

E

else commands:
\else: 249
\end 317, 521
exp commands:
\exp_after:wN 847
\exp_args:Ncc 239
\exp_args:Ne 144, 486, 2300, 2314
\exp_args:Nee 379
\exp_args:NNc 159
\exp_args:Nnno 442
\exp_args:NNNx 656
\exp_args:Nno 464
\exp_args:No 2277, 2290, 2348, 2404
\exp_last_unbraced:Ne 801
\exp_not:N 68, 385, 386, 390, 455, 460
\exp_not:n 68
\ExplLoaderFileDate 13

F

fi commands:
\fi: 249
\fmtversion 3
fp commands:
\fp_compare:nNnTF 548, 550
\fp_compare:nTF 491
\fp_const:Nn 2455
\fp_eval:n 460
\fp_set:Nn 455, 460
\fp_set_eq:NN 2467
\fp_to_dim:n 796
\fp_use:N 455
\fp_zero:N 493, 1555
\c_one_fp 492, 500, 550, 2374, 2437
\c_zero_fp 492, 548, 2373
\FRifFBOX 2320

G

group commands:
\group_begin: 236, 264, 653, 961, 1488, 1749
\c_group_begin_token 781
\group_end: 258, 264, 656, 977, 1502, 1765
\c_group_end_token 780
\group_insert_after:N 212, 227

H

hbox commands:
\hbox_gset:Nn . 173, 332, 355, 371, 1197, 1864, 1876, 2294
\hbox_gset:Nw . . . 183, 281, 2321
\hbox_gset_end: . . . 187, 189, 318, 326, 2341
\hbox_gset_to_wd:Nnn . . . 1607, 1625, 1657, 1670
\hbox_set:Nn . . . 1168, 2097
\hbox_set_to_wd:Nnn . . . 1008, 1425
\hbox_to_wd:nn . . . 1128, 1403
\hbox_unpack:N . . . 1171
\hbox_unpack_drop:N . . . 175, 184, 1111, 1285, 1828, 1852, 2050, 2102
height . . . 2
hoffset . . . 2
hook commands:
\hook_gput_code:nnn . . . 260, 262
\hook_gput_next_code:nn . . . *11*
hsep . . . 2

I

i . . . 2
if commands:
\if_int_compare:w . . . 248
int commands:
\int_case:nnTF . . . 1519, 2204
\int_compare:nNnTF . . . 475, 555, 601, 673, 675, 696, 715, 732, 778, 883, 1265, 1470, 1584, 1632
\int_const:Nn . . . 245, 1359, 1360
\int_eval:n . . . 706, 799, 1296, 1340
\int_gdecr:N . . . 104, 106, 202
\int_gincr:N . . . 143, 2036
\int_gset:Nn . . . 84, 895, 2007
\int_gset_eq:NN . . . 596, 682, 714, 726, 763, 968, 993, 1116, 1290, 1541, 2202
\int_gzero:N . . . 82, 723, 897, 943, 944, 1241, 1561, 1649, 1745, 2018
\int_if_even:nTF . . . 426
\int_if_odd:nTF . . . 496
\int_new:N 80, 224, 607, 608, 609, 772, 773, 1210, 2182, 2214
\int_set:Nn . . . 270, 479, 568, 569, 665, 1283, 2472
\int_set_eq:NN . . . 557, 564, 678, 768, 869, 1281, 1282, 1479, 2170
\int_sub:Nn . . . 1475
\int_use:N . . . 84, 145, 480
\int_value:w . . . 395
\int_zero:N . . . 558, 676, 757, 826, 827, 828, 829, 830, 831, 832, 833
\c_max_int . . . 869, 1281, 1282
\c_one_int . . . 696, 715, 718, 720, 732, 778, 1340, 1342, 1351, 2011
\c_zero_int . . . 475, 555, 673, 675, 883, 1345, 1353, 1521, 1584, 1632
iow commands:
\iow_now:Nn . . . 403
\iow_shipout_x:Nn . . . 386

K

keys commands:
\keys_define:nn . . . 2356
\l_keys_key_str . . . 2404
\keys_precompile:nnN . . . *3*, 465
\keys_set:nn . . . 2486
\keys_set_filter:nnnN . . . 274, 443
\killfloatstyle . . . 2311

L

l . . . 2
leftsep . . . 2
legacy commands:
\legacy_if:nTF . . . 401, 413, 784, 2253, 2330
lines . . . 2
\linewidth . . . 2432
linewidth . . . 2
M

msg commands:
\msg_critical:nn . . . 11, 22
\msg_error:nnn . . . 2478
\g_msg_module_name_prop . . . 24
\msg_new:nnn . . . 6, 16, 432
\msg_new:nnnn . . . 2479
\msg_warning:nn . . . 431

N

\newcounter . . . 393
\NewDocumentCommand . . . 2485, 2487
\NewDocumentEnvironment . . . 267, 535

O

o . . . 2

P

\par . . . 305, 2489
para commands:
\para_raw_end: . . . *7*, 264, 595, 1113, 1289
\para_raw_noindent: . . . 587, 900, 946, 1110, 1284, 1827, 1859, 1863
\parbox . . . *6*
prg commands:
\prg_new_conditional:Npnn . . . 246
\prg_replicate:nn 707, 1299, 1306, 1309, 1318, 1341, 1350
\prg_return_false: . . . 249
\prg_return_true: . . . 249
\ProcessKeyOptions . . . 2492, 2493
\ProcessKeysOptions . . . 2496
prop commands:
\prop_gclear:N . . . 414
\prop_get:NnN . . . 425
\prop_get:NnNTF . . . 494
\prop_gput:Nnn . . . 24, 398, 501
\prop_gput_if_new:Nnn . . . 385
\prop_if_empty:NTF . . . 418
\prop_map_break:n . . . 427

\prop_map_inline:Nn 423
\prop_new:N 438, 439

R

r 2
ratio 2
regex commands:
\regex_const:Nn 2476
\regex_match:NnTF 2471
\relax 2320
\RequirePackage 2495
rightsep 2

S

scan commands:
\scan_stop: 777, 1947
\s_stop 803, 806, 1180, 2132
seq commands:
\seq_gpop:NNTF 200
\seq_gpush:Nn 146
\seq_new:N 225
skip commands:
\skip_add:Nn 1121
\skip_gadd:Nn 970, 998, 2159, 2203
\skip_gset:Nn 814, 1953, 1979
\skip_gset_eq:NN 810, 811, 812, 813, 966, 984, 991, 996, 1114, 1960, 2177, 2245
\skip_gsub:Nn 823
\skip_gzero:N 1242, 1639, 2123, 2124, 2178, 2188
\skip_horizontal:N 2101
\skip_horizontal:n 1199, 1871, 1891
\skip_if_eq:nnTF 2099
\skip_new:N 839, 840, 841, 842, 843, 1211, 1787, 1973, 2163, 2164, 2215
\skip_set:Nn 133
\skip_set_eq:NN 834, 835, 836, 837, 1119, 1366, 1774, 2152
\skip_sub:Nn 1946
\skip_vertical:N 135, 137, 982, 1000, 1125, 1226, 1237, 1937, 1943, 2155
\skip_vertical:n 122, 1094, 1964
\skip_zero:N 867, 899, 945, 1775
\c_zero_skip 2100
\stepcounter 370
str commands:
\c_backslash_str 388, 405, 406
\str_const:Nn 1046
\str_if_eq:nnTF 1030
\strutbox 134, 542, 688

T

TEX and LATEX 2ε commands:
\@@FStrue 2320
\@@setframe 2320
\@arrayparboxrestore 226
\@auxout 386
\@captype 2266, 2310
\@currbox 2297, 2332
\@display@init *37*
\@float@setevery 2282
\@floatboxreset 2269
\@hangfrom *14*
\@ifl@t@r 3, 13
\@mainaux 403
\@noitemargtrue 785
\begin *1*
\caption *3*
\caption@clearmargin 2352
\caption@setoptions 2353
\caption@settype 2351
\dt@pfalse *38*
\end *1*
\everycr *38*
\FB@fs@wd 2323
\FBB@wd 2322
\FBc@wd 2313
\FBo@wd 2324
\float@makebox 2300
\flrow@FB 2335
\flrow@setlist 2314
\flrow@typ@tmpset 2338
\FR@everyfloat 2327
\FR@redefs 2312
\g@addto@macro 234
\halign *37*
\ifdt@p *38*
\list *15*
\mmeasure@ *38*
\par *2*, *15*, *42*
\parshape *7*, *14*, *15*
\penalty *38*
\vskip *38*
\width *2*
\wrapstuff@counter 390, 396
\wrapstuff@label 397
wrapstuff@par 535
\wrapstuff@parboxrestore *6*, 226
\wrapstuffclear *3*
\wrapstuffset *1*
tex commands:
\tex_baselineskip:D 123, 684, 802, 813, 837, 1366, 1516, 1571, 1603, 1718, 2033, 2040
\tex_clubpenalties:D 830
\tex_clubpenalty:D 826
\tex_currentgrouptype:D 778
\tex_displaywidowpenalties:D 833
\tex_displaywidowpenalty:D 829
\tex_displaywidth:D 856, 859, 1142
\tex_emergencystretch:D 1278
\tex_eqno:D 1157
\tex_everydisplay:D 847, 849
\tex_hangafter:D 726, 763, 768
\tex_hangindent:D 727, 764, 769
\tex_hbadness:D 1281

\tex_hfil:D 1406, 1436, 1611, 1629, 1661, 1674
\tex_hfuzz:D 1279
\tex_hrule:D 1947
\tex_hsize:D 759, 1109
\tex_hss:D 1011, 1014, 1131, 1133
\tex_ignorespaces:D 322
\tex_interlinepenalties:D 832, 1339, 1349
\tex_interlinepenalty:D 828
\tex_kern:D 745
\tex_lastnodetype:D 248, 2204
\tex_lastpenalty:D 968, 993, 1116, 2170
\tex_lastskip:D 966, 970, 991, 996, 998, 1114, 1119, 1121, 2152
\tex_leftskip:D 545, 810, 814, 834
\tex_leqno:D 38, 1156
\tex_lineskip:D 1960
\tex_lineskiplimit:D 1959
\tex_pagegoal:D 1924
\tex_parfillskip:D 812, 836
\tex_parshape:D 705, 714, 734, 757, 1295
\tex_parshapeindent:D 718
\tex_parshapelength:D 720
\tex_parskip:D 899, 945, 1720, 1774, 1775, 1968
\tex_penalty:D 981, 1236, 1356, 1358, 2173
\tex_prevdepth:D 517, 1985, 1987
\tex_prevgraf:D 596, 1290
\tex_rightskip:D 545, 811, 835
\tex_splittopskip:D 867
\tex_the:D 849
\tex_tolerance:D 1283
\tex_topskip:D 1944, 1946
\tex_unkern:D 1175
\tex_unpenalty:D 930, 931, 969, 972, 994, 1117, 2103, 2176
\tex_unskip:D 325, 930, 931, 967, 971, 992, 997, 999, 1111, 1115, 1120, 2103, 2111, 2139, 2158
\tex_vadjust:D 1220, 1232
\tex_vbadness:D 869, 1282
\tex_vfuzz:D 868, 1280
\tex_widowpenalties:D 831
\tex_widowpenalty:D 827
\the 2327
tl commands:
\tl_clear:N 142, 272, 663
\tl_const:Nn 25, 27, 43, 49
\tl_gclear:N 66, 293
\tl_gconcat:NNN 468
\tl_gput_right:Nn 65, 67, 73, 75, 81, 83, 89, 91, 105, 477, 1547
\tl_gset:Nn 68, 454, 459
\tl_if_blank:nTF 271
\tl_if_empty:NTF 292, 312, 449, 667, 685
\tl_map_function:NN 100, 101, 102, 103
\tl_new:N 64, 98, 99, 222, 363, 437
\tl_put_right:Nn 165, 178, 195
\tl_set:Nn 278, 495, 664, 2322, 2393, 2399
\tl_set_eq:NN 2394, 2400
\tl_use:N 115, 203, 537
token commands:
\c_math_toggle_token 1141, 1149
\token_to_str:N 160
top 1, 2356
type 3

U

use commands:
\use:N 2296
\use:n 1728
\use_none_delimit_by_s_stop:w 1172, 1174, 1176, 1178, 1180, 2146, 2212

V

\value 395
vbox commands:
\vbox_gset:Nn 962, 979, 988, 1091, 1122, 1750, 2298, 2333
\vbox_set:Nn 925, 1079, 1106, 1276, 1363, 1386, 1390, 1683, 2063, 2082, 2153, 2171, 2190
\vbox_set:Nw 580
\vbox_set_end: 597
\vbox_set_split_to_ht:NNn 975, 1372, 1374, 1444, 1756
\vbox_set_top:Nn 1446, 1696
\vbox_unpack:N 927, 1081, 1697, 1753
\vbox_unpack_drop:N 920, 965, 990, 1039, 1252, 1387, 1391, 1447, 1684, 1919, 2065, 2084, 2145, 2156, 2174, 2193, 2211
voffset 3
vsep 2

W

\width 655
width 2
wrapstuff 1, 267
\wrapstuffclear 3, 2487
\wrapstuffset 1, 2485
wstf internal commands:
\l__wstf_abovesep_tl 348, 2358, 2399, 2401
\l__wstf_add_box 2121, 2141, 2145, 2153, 2156, 2171, 2174, 2190, 2193, 2210, 2211
__wstf_add_last_box:w .. 2128, 2184, 2184, 2221, 2232
__wstf_add_last_finalise:w ... 2132, 2200, 2200, 2249
__wstf_add_last_penalty:w 2127, 2131, 2166, 2166, 2219, 2231, 2244, 2248
__wstf_add_last_skip:w 2126, 2129, 2130, 2148, 2148, 2218, 2229, 2230, 2247
__wstf_add_last_stop:w 2143, 2143, 2165, 2183, 2199, 2220, 2237, 2238
__wstf_add_pos_kludge: . 1213, 1213, 1818, 2024, 2045
__wstf_add_vskip: 1772, 1910, 1910
__wstf_add_vskip_auxi: 1913, 1922
__wstf_add_vskip_auxii: 1925, 1928, 1932
__wstf_add_vskip_auxiii: 1929, 1940
__wstf_add_vskip_auxiv: 1934, 1942, 1951
__wstf_add_vskip_display: 1914, 1916, 1982
__wstf_adjust_equation: 1012, 1058, 1160

__wstf_adjust_equation_width: 1164, 1183
__wstf_adjust_leqno: 1186, 1192
__wstf_adjust_skip:N 818, 819, 820, 822
__wstf_adjust_tex_skip: 598, 816
\g__wstf_amsmath_bool 952, 1005, 1057, 1083, 2071, 2125, 2222, 2240
__wstf_amsmath_boot:w 2216, 2216, 2260
__wstf_amsmath_leqno: 2251, 2251, 2262
__wstf_amsmath_multline:w 2216, 2223, 2241, 2241
__wstf_amsmath_recursion:w ... 2216, 2225, 2227, 2233
__wstf_amsmath_stop:NN 2224, 2235, 2243
__wstf_attach_equation:Nn 1065, 1070, 1077
__wstf_attach_equation_amsmath:Nn 1084, 1089
\l__wstf_attach_equation_bool 1055, 1062, 1269, 1397, 1433, 1508, 1567, 1701
__wstf_attach_equation_normal:Nn 1085, 1104
__wstf_attach_label: 291, 368, 368
__wstf_attach_left:N 1063, 1063, 1398, 1434, 1509, 1709
__wstf_attach_right:N 1063, 1068, 1568, 1710
\g__wstf_baseline_skip 813, 837, 842, 1366, 1373, 1375, 1760, 1955, 1980
\l__wstf_belowsep_tl 349, 2359, 2400
__wstf_block_penalties: 1334, 1347
\l__wstf_body_box 580, 605, 882, 906, 907, 909, 910, 911, 955, 1023, 1025, 1029, 1032, 1033, 1039, 1266, 1276, 1372, 1374, 1377, 1444, 1445, 1448, 1697, 1700, 1753, 1762, 1766
__wstf_bool_init:N 62, 86, 103
\l__wstf_bottom_box 882, 885, 892, 909, 911, 1025, 1029, 1034, 1035, 1040, 1263, 1266, 1267, 1268, 1285, 1430, 1478, 1494, 1725, 1781, 1803, 1828
__wstf_box_stop:w 2196, 2199, 2220, 2259
__wstf_break: 964, 1355, 1355, 1752
\c__wstf_break_int 1344, 1352, 1356, 1359
__wstf_build_block: 648, 1361, 1361
__wstf_build_body_box: .. 890, 1059, 1261, 1261, 1274
__wstf_build_box: 627, 635, 647, 648, 874, 1271, 1361, 1688, 1690
__wstf_build_column: 647, 1688, 1689, 1690, 2380, 2386
__wstf_build_column_aux: 1429, 1442, 1481, 1490
__wstf_build_column_fuzzy: 1423, 1423, 2387
__wstf_build_column_fuzzy_aux: ... 1431, 1450, 1482
__wstf_build_column_strict: .. 1486, 1486, 1689, 2381
__wstf_build_column_strict_auxi: 1492, 1505
__wstf_build_column_strict_auxii: 1495, 1563
__wstf_build_column_strict_auxiii: 1498, 1653
__wstf_build_column_strict_auxiv: 1499, 1667
__wstf_build_display_amsmath: 953, 959
__wstf_build_display_auxi: 956, 1003, 1041
__wstf_build_display_auxii: 957, 1021
__wstf_build_display_auxiii: 1026, 1043, 1053
__wstf_build_display_box: 888, 949, 949
__wstf_build_display_normal: 954, 986
__wstf_build_hang: 627, 635, 1691, 1691
__wstf_build_hang_attach: 1702, 1706
__wstf_build_hang_move: 1704, 1712
__wstf_build_hangfrom: 1694, 1747, 1747
__wstf_build_line: 1367, 1370, 1381
__wstf_build_line_repack: 1376, 1384
__wstf_build_par: 602, 871, 871
__wstf_build_par_aux: 875, 880
__wstf_build_window: 1264, 1274, 1480
\c__wstf_c_fp 2375, 2455
__wstf_caption_aux:n 2348, 2349
__wstf_caption_hook: 2268, 2344, 2344, 2347
__wstf_clear: 107, 107, 269, 2490
__wstf_clear_display_hook: 210, 863
__wstf_clear_kludge: 107, 110, 118
__wstf_clear_para_hook: 109, 209, 218, 522
__wstf_clear_stuff_box: 107, 127, 130
__wstf_clear_variable: 107, 111, 113, 211, 219, 1820, 1832, 2026
\g__wstf_column_bool ... 53, 571, 1311, 1497, 1511, 1655
\l__wstf_column_bool 646, 1304, 1332, 1688, 2379, 2385, 2390
\g__wstf_column_ht_dim 36, 1536, 1616, 1969, 1970
\g__wstf_column_int 46, 572, 682, 684, 1312, 1541
__wstf_column_move_entire: 1531, 1644
__wstf_column_move_entire_aux: 1524, 1526
__wstf_column_move_right: 1577, 1582
__wstf_column_penalties: 1333, 1337
__wstf_column_put_right: 1578, 1623
__wstf_column_right_move_set:nn 1538, 1543, 1646, 1742
\g__wstf_column_room_dim 39, 1560, 1586, 1596, 1613, 1648, 1703, 1722, 1723, 1744
__wstf_counter:n 380, 381, 394, 396, 487, 495
__wstf_dim_init:N 62, 70, 101
\g__wstf_display_bool 55, 846, 858, 2066
\l__wstf_display_bool 951, 1061, 1225, 1230
\g__wstf_display_box . 887, 965, 979, 988, 990, 1019, 1056, 1912, 1919, 1977, 2068, 2069, 2076, 2116, 2122, 2210
\l__wstf_display_dim 563, 567, 615, 859, 978, 1009, 1073, 1109, 1129, 1142
__wstf_display_hook: 153, 850, 853, 864
__wstf_display_parameter: 585, 844, 844
\l__wstf_display_pre_bool 1918, 1974
\g__wstf_display_pre_dim 1097, 2077, 2117
\g__wstf_display_pre_int 981, 2202, 2214
\g__wstf_display_pre_skip 982, 984, 1096, 2124, 2203, 2215, 2245
__wstf_empty: 409, 524, 525, 526, 527, 529, 531, 532, 533, 534, 576, 577, 599, 600, 783, 786, 788, 789, 862, 864, 1256, 1418, 2271, 2272, 2305, 2344
\g__wstf_entire_bool 54, 1528, 1535, 1565, 1643
__wstf_env_before: 512, 516
__wstf_env_begin: 513, 518, 2049
__wstf_env_end: 514, 520, 2051
\g__wstf_eqbody_box 1154, 1177, 1189, 1195, 1196, 1201, 1207
\g__wstf_eqnum_bool 1145, 1163, 1170, 1179, 1212
\g__wstf_eqnum_box 1158, 1173, 1194, 1195, 1208

\g__wstf_equation_box 962, 975, 978, 995, 1006, 1013, 1091, 1101, 1122, 1143, 1147, 1153, 1171, 1188, 1197, 1202, 1204, 1209, 1222, 1234, 1251, 1252, 1573, 1591, 1600, 1619, 1719, 1790, 1793, 1829
\g__wstf_equation_dp_bool 1217, 1249, 1257, 1260, 1857
__wstf_extract_depth:N 919, 923
__wstf_extract_display_hbox:NN 882, 2060
__wstf_extract_hbox:NN . . 909, 1029, 1266, 2060, 2080
__wstf_extract_hbox_aux:N 2078, 2087, 2089
__wstf_extract_last_hbox:N 2072, 2085, 2106
__wstf_extract_pos_hbox: 2120, 2134
\g__wstf_first_dp_dim 33, 1517, 1537
\l__wstf_first_move_bool 1552, 1554, 1687, 1935
__wstf_first_move_skip: 1936, 1962
\g__wstf_first_save_bool 59, 1512, 1514
\g__wstf_first_sep_dim 34, 1515, 1533, 1589, 1602, 1633, 1966
\g__wstf_first_set_bool 58, 1546, 1549, 1551
__wstf_float_pos_aux:n 2290, 2292
\g__wstf_float_pos_bool 2275, 2283, 2285, 2289
__wstf_float_pos_hook: . . 319, 2271, 2272, 2287, 2328
__wstf_float_pre_aux:n 2277, 2278
__wstf_float_pre_hook: . 2267, 2271, 2271, 2276, 2326
__wstf_floatrow_hook: 308, 2305, 2305, 2308
__wstf_gadd_hook:nn 259, 259, 305, 399, 411, 416, 506, 507, 508, 509, 790
__wstf_gadd_ht:Nn 265, 265, 348
\c__wstf_global_bool_tl 25, 103
\c__wstf_global_dim_tl 25, 101
\c__wstf_global_int_tl 25, 102
\c__wstf_global_tl_tl 25, 100
__wstf_group_begin: 781, 783, 789, 793
__wstf_group_kludge: 592, 775, 775
__wstf_gset_height: 328, 330
\l__wstf_hang_bool 561, 620, 623, 631, 639, 750, 1297, 1330
\g__wstf_hang_ht_dim 29, 1569, 1576, 1647, 1739, 1741, 1743
\g__wstf_hangafter_int 696, 726, 763, 768, 773
\g__wstf_hangfrom_bool 704, 758, 771, 873, 1693
\g__wstf_hangindent_dim 694, 727, 764, 769, 774
__wstf_hbox:n 1836, 1861
__wstf_hbox_begin: 284, 321
__wstf_hbox_end: 289, 323
\l__wstf_height_dim 280, 309, 310, 327, 336, 343, 367, 1991, 1997, 1999, 2030, 2035
\l__wstf_height_tl 280, 2365
\c__wstf_hlist_node 2206
\l__wstf_hoffset_tl 658, 2366
\g__wstf_ht_dim 1017, 1412, 1420, 1516, 1603, 1682, 1698, 1758, 1944, 1946, 1957, 1980
__wstf_if_last_glue:TF 236, 2150
__wstf_if_last_hlist:TF 186, 236, 928, 933, 1172, 1176, 2108, 2120, 2186
__wstf_if_last_kern:TF 236, 1174
__wstf_if_last_none:TF 236, 1178, 1850
__wstf_if_last_penalty:TF 236, 2168
__wstf_if_last_whatsit:TF 236
__wstf_ignore_depth: 132, 138, 1920, 1938, 1949, 1984, 1984
\c__wstf_ignore_depth_dim 1771, 1985, 1988
\l__wstf_inner_bool 497, 504, 2459, 2460
__wstf_insert_equation: 1112, 1139, 1830
__wstf_int_init:N 62, 78, 102
\c__wstf_integer_regex 2471, 2476
__wstf_interline_penalties: 1288, 1328, 1328
\l__wstf_l_box 1372, 1386, 1387, 1398, 1405, 1415, 1421, 1434, 1435, 1438, 1444, 1446, 1447, 1455, 1462, 1476, 1509, 1510, 1579, 1580, 1598, 1610, 1628, 1634, 1660, 1665, 1673, 1676, 1682, 1683, 1684
\l__wstf_l_dim 567, 610, 625, 634, 642, 645, 742, 1308, 1321, 1870
\g__wstf_last_box 1864, 1865, 1866, 2072, 2074, 2085, 2091, 2102, 2115, 2136
\l__wstf_last_box 925, 935, 937, 975, 1079, 1082, 1086, 1106, 1118, 1132, 1168, 1194, 1196, 1756, 2137, 2138, 2189, 2192, 2198
\l__wstf_last_int 2170, 2173, 2182, 2202
\l__wstf_last_l_box 1460, 1462, 1476, 1484
\l__wstf_last_r_box 1463, 1477, 1485
\g__wstf_last_skip . . 2123, 2159, 2164, 2177, 2178, 2188
\l__wstf_last_skip . . 133, 135, 137, 1119, 1121, 1125, 2152, 2155, 2159, 2163
\g__wstf_left_skip 810, 818, 834, 839
\l__wstf_leftsep_dim 538, 617, 632, 641, 1899, 1906
\l__wstf_leftsep_tl 538, 2360, 2393, 2395
\g__wstf_leqno_bool 52, 1155, 1185, 2254, 2255
\l__wstf_line_dim 541, 543, 544, 547, 613, 1072, 1403, 1426, 1558, 1608, 1626, 1658, 1671, 1865, 1871
\g__wstf_line_int 596, 601, 608, 896, 1265, 1290, 1522, 1718
\l__wstf_lines_tl 663, 664, 667, 669, 685, 2363
\l__wstf_linewidth_tl 541, 2362
\l__wstf_main_kv_tl 272, 276, 292, 363, 445, 449, 467, 471
\g__wstf_main_left_skip 814, 843, 2100, 2101
\g__wstf_main_setting_tl 26, 293, 454, 459, 469, 470, 477, 537, 1547
\l__wstf_main_width_dim 543, 619, 725
__wstf_make_hangfrom: 697, 748
__wstf_make_hangfrom_aux: 751, 754
__wstf_make_main_parshape: 586, 594, 692, 692
__wstf_make_main_parshape_aux: . . 698, 700, 702, 752
__wstf_make_next_stuff:nn 1557, 2015, 2054, 2054
__wstf_make_parshape: 1287, 1293, 1293
\l__wstf_min_dim 542, 612, 668, 1458, 2001, 2031
__wstf_minipage_begin: 283, 306
__wstf_minipage_end: 288, 315
\g__wstf_move_hang_bool 56, 1730, 1736, 1738
\g__wstf_next_bool 51, 120, 216, 662, 671, 1218, 1839, 1927, 1993, 2037, 2056
\g__wstf_next_hang_bool . . . 57, 1529, 1605, 1651, 1809
__wstf_next_hang_para: 1593, 1641, 1811
__wstf_next_para: 303, 506, 510, 901, 947, 2047

__wstf_next_para_trailer: 1812, 1816, 2019, 2043, 2043
__wstf_nobreak: 1093, 1124, 1224, 1355, 1357
\c__wstf_nobreak_int 1343, 1358, 1360
\c__wstf_none_node 2207
\l__wstf_outer_bool 498, 505, 2461, 2462
__wstf_output_equation_box: 1223, 1235, 1244
__wstf_output_pos_box: 1846, 1848
__wstf_output_pos_box_aux: 1851, 1854
__wstf_output_stuff_box: 1840, 1874
__wstf_output_window_box: 1802, 1834, 2014, 2023
__wstf_package_hook:nn 259, 261, 2257, 2273, 2306, 2345
\g__wstf_page_prop 385, 398, 414, 425, 438, 494
\l__wstf_page_tl 425, 426, 437, 494, 495, 496, 501
\l__wstf_par_skip 1774, 1787, 1993, 2033, 2040
__wstf_para_after: 507, 525, 532, 600, 1247, 1256
__wstf_para_before: 150, 506, 512, 524, 531, 576
__wstf_para_begin: 151, 508, 513, 526, 533, 577
__wstf_para_end: 152, 509, 514, 527, 534, 599
__wstf_para_raw_end: 263, 263, 905, 913, 1770, 1826, 1856
__wstf_parbox_restore: 228, 579
\g__wstf_parfill_skip 812, 820, 836, 841
\g__wstf_parshape_indent_dim .....
..... 40, 709, 717, 724, 735, 744, 745, 1066, 1074
\g__wstf_parshape_int 714, 715, 723, 732, 734, 772
__wstf_parshape_kern: 740, 1878
\g__wstf_parshape_length_dim .. 41, 709, 719, 725, 736
__wstf_penalty_stop:w 2180, 2183, 2224, 2238
__wstf_pop_box:N 179, 181
\g__wstf_pos_box 1845, 1852, 2046, 2050, 2062, 2138, 2142
\g__wstf_pos_int 968, 993, 1116, 1210, 1236, 1241
\g__wstf_pos_skip 966, 970, 991,
1114, 1211, 1226, 1237, 1242, 1574, 1620, 1639, 1793, 1796
\g__wstf_pre_skip .. 984, 996, 998, 1000, 1937, 1943,
1953, 1959, 1960, 1970, 1973, 1979, 1994, 2177, 2203, 2246
\g__wstf_prevdepth_dim 35, 517, 581, 917, 918,
921, 936, 1215, 1250, 1258, 1517, 1537, 1761, 1771, 1956
__wstf_push_box:N 154, 171
__wstf_push_cs:nN 150, 151, 152, 153, 157
__wstf_push_cs_aux:NN 159, 162
__wstf_push_var: 155, 193
__wstf_put_body_aux:N 907, 910, 915
__wstf_put_body_box: 884, 898, 903, 903
__wstf_put_bottom_box: 1805, 1824
__wstf_put_box: 878, 1768, 1768
__wstf_put_box_aux: 1779, 1783, 1798, 1800
__wstf_put_last_line: 1378, 1395
__wstf_put_line_box: 1380, 1399, 1401
__wstf_put_next_par: 877, 941, 941
__wstf_put_next_test: 1782, 1788
__wstf_put_par: 603, 893, 893
__wstf_put_pos_box: 1819, 1831, 1843, 2025
__wstf_put_trailer_box: 1804, 1807
__wstf_put_window_box: 1838, 1868
\l__wstf_r_box .. 1374, 1388, 1390, 1391, 1407, 1416,
1422, 1438, 1439, 1448, 1454, 1463, 1477, 1491, 1568,
1572, 1590, 1599, 1614, 1618, 1635, 1637, 1662, 1676, 1677
\l__wstf_r_dim 611,
626, 633, 644, 1315, 1322, 1558, 1708, 1871, 1893, 1901
__wstf_ratio:Nn 643, 795, 795
\l__wstf_ratio_fp 448,
455, 460, 492, 493, 499, 500, 548, 550, 643, 1555, 2369, 2467
__wstf_rebuild_window: 1466, 1468
__wstf_rebuild_window_aux: 1471, 1473
\g__wstf_remaining_dim .....
..... 38, 301, 668, 687, 689, 1739, 1796, 1999, 2058
__wstf_repack_equation: 1146, 1151
__wstf_repack_hbox:N 2093, 2095, 2137
__wstf_repack_left_box: .....
..... 1432, 1507, 1566, 1656, 1669, 1680
__wstf_rerun_check: 368, 419, 421
\g__wstf_rerun_prop 418, 423, 439, 501
__wstf_rerun_warning: 427, 430
__wstf_restore_hangfrom: 738, 756, 766
__wstf_restore_parshape: 584, 730
\g__wstf_right_move_bool .....
..... 60, 1545, 1604, 1726, 1731, 1778, 1815
\g__wstf_right_skip 811, 819, 835, 840
\l__wstf_rightsep_dim ... 539, 618, 624, 641, 1558, 1902
\l__wstf_rightsep_tl 539, 2361, 2394
\l__wstf_save_body_box 1263, 1273, 1478
__wstf_save_first_ht: 1393, 1410, 1418
__wstf_save_hangfrom: 590, 761
__wstf_save_main_setting: 294, 440, 440
__wstf_save_main_setting_aux: 450, 462
__wstf_save_parshape: 578, 712
__wstf_save_tex_skip: 582, 591, 808, 808
__wstf_set_belowsep: 351, 353
__wstf_set_equation_depth: 1248, 1254, 1858
__wstf_set_float: 313, 2264, 2264
__wstf_set_hang_left: 554, 621, 621
__wstf_set_hang_right: 552, 621, 629
__wstf_set_hoffset:N 624, 632, 650, 650
__wstf_set_itemarg: 785, 786, 788, 792
__wstf_set_lines: 560, 660, 660
__wstf_set_next: 1797, 1989, 1989
__wstf_set_next_hang: 1726, 1734
__wstf_set_next_output: 2003, 2021
__wstf_set_next_para: 2002, 2005
__wstf_set_next_verify: 2013, 2028
__wstf_set_prevdepth:N ... 581, 921, 1258, 1984, 1986
__wstf_set_ratio:N 448, 452, 499
__wstf_set_ratio:n 457, 500
__wstf_set_top_line: 295, 473, 473
__wstf_set_vsep: 290, 346
__wstf_set_vskip: 1773, 1975, 1975
__wstf_set_window: 551, 621, 637
\l__wstf_shift_dim 349, 350,
358, 365, 1714, 1722, 1741, 1998, 2001, 2009, 2010, 2017
__wstf_skip_stop:w 2161, 2165, 2223, 2237
__wstf_split_parameter: .....
..... 865, 865, 974, 1365, 1428, 1489, 1755
__wstf_status_clear: 140, 214, 227

\g__wstf_status_int 143, 145, 202, 224
__wstf_status_pop: 140, 198, 212
__wstf_status_push: 140, 140, 208
__wstf_status_push_aux:n 144, 148
__wstf_status_restore: 7, 140, 206, 232
\g__wstf_status_seq 146, 200, 225
\l__wstf_status_tl . 142, 146, 165, 178, 195, 200, 203, 222
\g__wstf_stauts_box 173, 175, 183, 184, 190, 223
\g__wstf_stuff_box . 116, 126, 136, 154, 281, 297, 299, 332, 337, 338, 341, 343, 344, 348, 355, 358, 359, 361, 364, 371, 374, 1876, 1881, 1884, 1887, 1889, 1890, 1908, 2294, 2297, 2298, 2299, 2301, 2321, 2332, 2333, 2334, 2339
\g__wstf_stuff_ht_dim . . . 31, 298, 302, 689, 1539, 1571
\g__wstf_stuff_wd_dim 32, 296, 547, 654, 1903, 2016, 2057
\l__wstf_swap_bool 446, 503, 2458, 2466
__wstf_swap_false:N 2373, 2374, 2375, 2464
__wstf_swap_ratio: 447, 484, 484
__wstf_swap_ratio_aux:n 486, 489
__wstf_swap_true:N 2371, 2372, 2456
__wstf_test_display_math: 2067, 2118, 2118
__wstf_test_eqnum: 1162, 1166
__wstf_test_leqno: 855, 862, 2261
__wstf_tex_parameter: . . 583, 593, 808, 824, 1108, 1286
__wstf_tl_init:N 62, 62, 100
__wstf_tmp:nn 237, 252, 253, 254, 255, 256, 257
__wstf_tmp_aux:NNn 239, 243
\g__wstf_top_int 5, 45, 104, 106, 673, 678, 895, 943, 1561, 2018
\l__wstf_top_int 270, 475, 479, 480, 558, 601, 675, 676, 678, 706, 708, 883, 896, 2370, 2472
\g__wstf_total_ht_dim 30, 1997, 2031
\l__wstf_type_tl 278, 312, 2266, 2277, 2290, 2310, 2316, 2318, 2348, 2368
__wstf_unit:n 668, 795, 797, 1572, 2010
__wstf_unit_aux:w 801, 806
__wstf_unknown_key:n 2404, 2469
__wstf_unknown_key_error:n 2473, 2477
\g__wstf_var_clear_tl 65, 73, 81, 89, 98, 105, 115
\g__wstf_var_push_tl 67, 75, 83, 91, 99, 196
\l__wstf_voffset_dim 540, 616, 1018, 1885
\l__wstf_voffset_tl 540, 2367
\c__wstf_whatsit_node 2208
\l__wstf_width_dim 279, 282, 287, 310, 311, 366, 654, 655, 2322, 2324, 2335
\l__wstf_width_tl 279, 2364
\g__wstf_window_box 1503, 1510, 1579, 1580, 1607, 1625, 1657, 1664, 1670, 1686, 1750, 1756, 1763, 1766
\l__wstf_window_box 606, 876, 1006, 1008, 1017, 1216, 1270, 1363, 1425, 1503, 1534, 1696, 1698, 1700, 1709, 1710, 1717, 1777, 1872, 1882, 1896
\l__wstf_window_dim 546, 563, 614, 626, 634, 640, 643, 645, 652, 657, 759, 1301, 1898
\g__wstf_window_ht_dim 37, 683, 688, 1540, 1588, 1633, 1967, 2031
\l__wstf_window_ht_dim 1776, 1786, 1792, 1796, 1883, 1995, 2039
__wstf_window_init: 660, 672, 680
\g__wstf_window_int 47, 123, 555, 557, 897, 944, 1519, 1541, 1584, 1632, 1649, 1745, 2007, 2033, 2036, 2040
\l__wstf_window_int 557, 564, 568, 572, 573, 607, 665, 682, 1300, 1307, 1313, 1319, 1340, 1342, 1349, 1351, 1470, 1475, 1479
\l__wstf_window_line_int 564, 569, 609, 1265, 1296, 1479
__wstf_write_label: 368, 373, 377, 409
__wstf_write_label_aux:nn 379, 383
\c__wstf_zero_pt_str 1037, 1046

Z

\Z 2476