

# wrapstuff 宏包

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## 第 1 节 基本用法

`wrapstuff` 宏包提供了图文绕排的另一实现。`wrapstuff` 的实现依赖 `LATEX 2021-06-01` 开始提供的段落钩子,并依赖 `LATEX 3 2022-04-10` 之后的版本。

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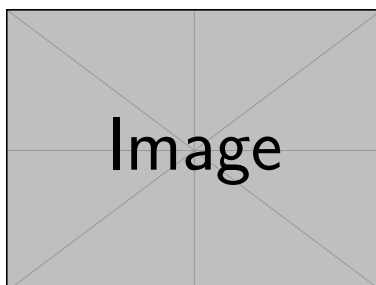
<code>wrapstuff</code>	<code>\begin{wrapstuff}[&lt;选项&gt;]</code> <绕排内容> <code>\end{wrapstuff}</code> <正文>
------------------------	--

---

`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。



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

---

<code>\wrapstuffset</code>	<code>\wrapstuffset {&lt;选项列表&gt;}</code>
----------------------------	---

---

`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。

---

<code>top</code>	<code>top = &lt;非负整数&gt;</code> <code>&lt;n&gt;</code>
------------------	---

---

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。

---

<code>width</code>	<code>width = &lt;宽度&gt;</code>
--------------------	---------------------------------

---

设置绕排内容的宽度,初始值为 0pt,代表自然宽度。

---

<code>height</code>	<code>height = &lt;高度&gt;</code>
---------------------	----------------------------------

---

设置绕排内容的高度,初始值为 0pt,代表自然高度。

---

\*rev. 564fe9d.

---

`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 1em。

---

`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 0pt。

---

`l` `l/r/c/i/o`  
`r` `ratio` = <实数>

---

`c` 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  
`i` 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  
`o` 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  
`ratio` 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  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 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 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
```

---

`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 0pt。

---

`voffset` `voffset` = <长度>

---

用于调整绕排内容的竖直位置,初始值为 0pt。


---

`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
```

---

`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。

---

`\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 L<sup>A</sup>T<sub>E</sub>X 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 L<sup>A</sup>T<sub>E</sub>X3。

```
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 }
```

一些  $\epsilon$ -T<sub>E</sub>X 结点判定函数。

```
\__wstf_if_last_none:TF
\__wstf_if_last_hlist:TF
\__wstf_if_last_whatst:TF
\__wstf_if_last_glue:TF
\__wstf_if_last_kern:TF
\__wstf_if_last_penalty:TF

25 \group_begin:
26 \cs_set:Npn \__wstf_tmp:nn #1
27 {
28   \group_begin:
29   \exp_args:Ncc \__wstf_tmp_aux:NNn
30   { \__wstf_if_last_ #1 : }
31   { c_#1 _node }
32 }
33 \cs_set:Npn \__wstf_tmp_aux:NNn #1#2#3
34 {
35   \group_end:
36   \int_const:Nn #2 {#3}
37   \prg_new_conditional:Npnn #1 { T , F , TF }
38   {
39     \if_int_compare:w \tex_lastnodetype:D = #2
40     \prg_return_true: \else: \prg_return_false: \fi:
41   }
42 }
43 \__wstf_tmp:nn { none } { -1 }
44 \__wstf_tmp:nn { hlist } { 1 }
45 \__wstf_tmp:nn { whatst } { 9 }
46 \__wstf_tmp:nn { glue } { 11 }
47 \__wstf_tmp:nn { kern } { 12 }
48 \__wstf_tmp:nn { penalty } { 13 }
49 \group_end:
```

```

__wstf_gadd_hook:nn 50 \cs_new_protected:Npn \__wstf_gadd_hook:nn #1
__wstf_package_hook:nn 51 { \hook_gput_code:nnn {#1} { wrapstuff } }
52 \cs_new_protected:Npn \__wstf_package_hook:nn #1
53 { \hook_gput_code:nnn { package/#1/after } { wrapstuff } }

```

**wrapstuff** 主要功能环境接口。

```

54 \NewDocumentEnvironment { wrapstuff } { 0 { } }
55 {
56   \__wstf_clear:
57   \int_set:Nn \l__wstf_top_int { -1 }
58   \tl_if_blank:NTF {#1}
59   { \tl_clear:N \l__wstf_main_kv_tl }
60   {
61     \keys_set_filter:nnnN { wrapstuff }
62     { main , ratio }
63     {#1} \l__wstf_main_kv_tl
64   }
65   \tl_set:Nx \l__wstf_type_tl { \l__wstf_type_tl }
66   \dim_set:Nn \l__wstf_width_dim { \l__wstf_width_tl }
67   \dim_set:Nn \l__wstf_height_dim { \l__wstf_height_tl }
68   \hbox_gset:Nw \g__wstf_stuff_box
69   \dim_compare:nNnTF \l__wstf_width_dim > \c_zero_dim
70   { \__wstf_minipage_begin: }
71   { \__wstf_hbox_begin: }
72 }
73 {
74   \dim_compare:nNnTF \l__wstf_width_dim > \c_zero_dim
75   { \__wstf_minipage_end: }
76   { \__wstf_hbox_end: }
77   \__wstf_set_vsep:
78   \__wstf_attach_label:
79   \tl_if_empty:NNTF \l__wstf_main_kv_tl
80   { \tl_gclear:N \g__wstf_main_setting_tl }
81   { \__wstf_save_main_setting: }
82   \__wstf_set_top_line:
83   \dim_gset:Nn \g__wstf_stuff_wd_dim
84   { \box_wd:N \g__wstf_stuff_box }
85   \dim_gset:Nn \g__wstf_stuff_ht_dim
86   { \box_ht_plus_dp:N \g__wstf_stuff_box }
87   \dim_gset_eq:NN
88   \g__wstf_remaining_dim
89   \g__wstf_stuff_ht_dim
90   \__wstf_next_para:
91 }
92 \__wstf_gadd_hook:nn { env/wrapstuff/before } { \par }
93 \cs_new_protected_nopar:Npn \__wstf_minipage_begin:
94 {
95   \__wstf_floatrow_hook:
96   \dim_compare:nNnTF \l__wstf_height_dim > \c_zero_dim
97   { \begin { minipage } [b] [ \l__wstf_height_dim ] [c] { \l__wstf_width_dim } }
98   { \begin { minipage } [b] { \l__wstf_width_dim } }
99   \tl_if_empty:NNTF \l__wstf_type_tl
100   { \__wstf_set_float: }
101 }
102 \cs_new_protected_nopar:Npn \__wstf_minipage_end:
103 {
104   \end { minipage }
105   \hbox_gset_end:
106   \__wstf_float_pos_hook:
107 }
108 \cs_new_protected_nopar:Npn \__wstf_hbox_begin:
109 { \tex_ignorespaces:D }
110 \cs_new_protected_nopar:Npn \__wstf_hbox_end:
111 {
112   \tex_unskip:D
113   \hbox_gset_end:
114   \dim_compare:nNnT \l__wstf_height_dim > \c_zero_dim

```

```

115     { \_wstf_gset_height: }
116 }
117 \cs_new_protected_nopar:Npn \_wstf_gset_height:
118 {
119     \hbox_gset:Nn \g__wstf_stuff_box
120     {
121         \box_move_up:nn
122         {
123             ( \l__wstf_height_dim
124               - \box_ht:N \g__wstf_stuff_box
125               + \box_dp:N \g__wstf_stuff_box
126             ) / 2
127         }
128         { \box_use_drop:N \g__wstf_stuff_box }
129     }
130     \box_gset_ht:Nn \g__wstf_stuff_box { \l__wstf_height_dim }
131     \box_gset_dp:Nn \g__wstf_stuff_box { \c_zero_dim }
132 }
133 \cs_new_protected_nopar:Npn \_wstf_set_vsep:
134 {
135     \_wstf_gadd_ht:Nn \g__wstf_stuff_box { \l__wstf_abelvesep_tl }
136     \dim_set:Nn \l__wstf_shift_dim { \l__wstf_belowsep_tl }
137     \dim_compare:nNnF \l__wstf_shift_dim = \c_zero_dim
138     { \_wstf_set_belowsep: }
139 }
140 \cs_new_protected_nopar:Npn \_wstf_set_belowsep:
141 {
142     \hbox_gset:Nn \g__wstf_stuff_box
143     {
144         \box_move_up:nn
145         { \l__wstf_shift_dim + \box_dp:N \g__wstf_stuff_box }
146         { \box_use_drop:N \g__wstf_stuff_box }
147     }
148     \box_gset_dp:Nn \g__wstf_stuff_box { \c_zero_dim }
149 }
150 \tl_new:N \l__wstf_main_kv_tl
151 \tl_new:N \g__wstf_main_setting_tl
152 \box_new:N \g__wstf_stuff_box
153 \dim_new:N \g__wstf_stuff_ht_dim
154 \dim_new:N \g__wstf_stuff_wd_dim
155 \dim_new:N \l__wstf_shift_dim
156 \dim_new:N \l__wstf_width_dim
157 \dim_new:N \l__wstf_height_dim
158 \dim_new:N \g__wstf_prevdepth_dim
159 \dim_new:N \g__wstf_remaining_dim
160 \cs_new_protected_nopar:Npn \_wstf_attach_label:
161 \_wstf_write_label:
162 {
163     \stepcounter { wrapstuff }
164     \hbox_gset:Nn \g__wstf_stuff_box
165     {
166         \_wstf_write_label:
167         \box_use_drop:N \g__wstf_stuff_box
168     }
169 }
170 \cs_new_protected_nopar:Npn \_wstf_write_label:
171 {
172     \iow_shipout_x:Nx \@auxout
173     {
174         \c_backslash_str wrapstuff@label
175         { \_wstf_counter:n { wrapstuff } }
176         { \exp_not:N \wrapstuff@counter { page } }
177     }
178 }
179 \cs_new:Npn \_wstf_counter:n #1
180 { \int_value:w \value {#1} }
181 \cs_new_eq:NN \wrapstuff@counter \_wstf_counter:n
182 \cs_new_protected_nopar:Npn \wrapstuff@label

```

```

182 { \@newl@bel { wrapstuff@label } }
183 \tl_const:Nn \c__wstf_label_tl
184 { wrapstuff@label@ \int_value:w \value { wrapstuff } }
185 \__wstf_gadd_hook:nn { begindocument }
186 {
187   \legacy_if:nTF { @files }
188   {
189     \iow_now:Nx \@mainaux
190     {
191       \c_backslash_str providecommand
192       \c_backslash_str wrapstuff@label [2] { }
193     }
194   }
195   { \cs_gset_eq:NN \__wstf_write_label: \__wstf_empty: }
196 }
197 \newcounter { wrapstuff }

\__wstf_save_main_setting: 198 \cs_new_protected_nopar:Npn \__wstf_save_main_setting:
199 {
200   \exp_args:Nnno
201   \keys_set_filter:nnnN { wrapstuff }
202   { main }
203   { \l__wstf_main_kv_tl } \l__wstf_main_kv_tl
204   \bool_if:NTF \l__wstf_swap_bool
205   { \__wstf_swap_ratio: }
206   { \__wstf_set_ratio:N \l__wstf_ratio_fp }
207   \tl_if_empty:NF \l__wstf_main_kv_tl
208   { \__wstf_save_main_setting_aux: }
209 }
210 \cs_new_protected:Npn \__wstf_set_ratio:N #1
211 {
212   \tl_gset:Nx \g__wstf_main_setting_tl
213   { \fp_set:Nn \exp_not:N \l__wstf_ratio_fp { \fp_use:N #1 } }
214 }
215 \cs_new_protected:Npn \__wstf_set_ratio:n #1
216 {
217   \tl_gset:Nx \g__wstf_main_setting_tl
218   { \fp_set:Nn \exp_not:N \l__wstf_ratio_fp { \fp_eval:n {#1} } }
219 }
220 \cs_new_protected_nopar:Npn \__wstf_save_main_setting_aux:
221 {
222   \exp_args:Nno
223   \keys_precompile:nnN
224   { wrapstuff }
225   { \l__wstf_main_kv_tl } \l__wstf_main_kv_tl
226   \tl_gconcat:NNN \g__wstf_main_setting_tl
227   \g__wstf_main_setting_tl \l__wstf_main_kv_tl
228 }

\__wstf_set_top_line: 229 \cs_new_protected_nopar:Npn \__wstf_set_top_line:
230 {
231   \int_compare:nNnF \l__wstf_top_int < \c_zero_int
232   {
233     \tl_gput_right:Nx \g__wstf_main_setting_tl
234     {
235       \int_set:Nn \l__wstf_top_int
236       { \int_use:N \l__wstf_top_int }
237     }
238   }
239 }

\__wstf_swap_ratio: 240 \cs_new_protected_nopar:Npn \__wstf_swap_ratio:
241 {
242   \fp_compare:nF
243   { \c_zero_fp < \l__wstf_ratio_fp < \c_one_fp }
244   { \fp_zero:N \l__wstf_ratio_fp }
245   \int_if_odd:nTF
246   {

```

```

247     \exp_args:Ne \cs_if_exist_use:cF
248     { \c__wstf_label_tl }
249     { \__wstf_counter:n { page } }
250   }
251   { \bool_if:NTF \l__wstf_inner_bool }
252   { \bool_if:NTF \l__wstf_outer_bool }
253   { \__wstf_set_ratio:N \l__wstf_ratio_fp }
254   { \__wstf_set_ratio:n { \c_one_fp - \l__wstf_ratio_fp } }
255 }
256 \bool_new:N \l__wstf_swap_bool
257 \bool_new:N \l__wstf_inner_bool
258 \bool_new:N \l__wstf_outer_bool

\__wstf_gadd_ht:Nn 259 \cs_new_protected:Npn \__wstf_gadd_ht:Nn #1#2
\__wstf_gsub_ht:Nn 260 { \box_gset_ht:Nn #1 { \box_ht:N #1 + \dim_eval:n {#2} } }
261 \cs_new_protected:Npn \__wstf_gsub_ht:Nn #1#2
262 { \box_gset_ht:Nn #1 { \box_ht:N #1 - \dim_eval:n {#2} } }

\__wstf_clear: 263 \cs_new_protected_nopar:Npn \__wstf_clear:
264 {
265   \__wstf_clear_para_hook:
266   \__wstf_clear_kludge:
267   \__wstf_clear_variable:
268 }
269 \cs_new_protected_nopar:Npn \__wstf_clear_variable:
270 {
271   \int_gset:Nn \g__wstf_top_int { -1 }
272   \int_gzero:N \g__wstf_window_int
273   \dim_gzero:N \g__wstf_total_ht_dim
274   \dim_gzero:N \g__wstf_column_left_dim
275   \tl_gclear:N \g__wstf_main_setting_tl
276   \bool_gset_false:N \g__wstf_next_bool
277   \bool_gset_false:N \g__wstf_hoffset_bool
278   \bool_gset_false:N \g__wstf_next_hang_bool
279   \bool_gset_false:N \g__wstf_first_save_bool
280   \bool_gset_false:N \g__wstf_right_move_bool
281   \bool_gset_false:N \g__wstf_column_right_bool
282 }
283 \cs_new_protected_nopar:Npn \__wstf_clear_kludge:
284 {
285   \bool_if:NTF \g__wstf_next_bool
286   {
287     \box_gclear:N \g__wstf_stuff_box
288     \skip_vertical:n
289     { \tex_baselineskip:D * \g__wstf_window_int }
290   }
291   {
292     \box_if_empty:NF \g__wstf_stuff_box
293     { \__wstf_clear_stuff_box: }
294   }
295 }
296 \cs_new_protected_nopar:Npn \__wstf_clear_stuff_box:
297 {
298   \__wstf_ignore_depth:
299   \skip_set:Nn \l__wstf_last_skip
300   { \box_dp:N \strutbox }
301   \skip_vertical:N \l__wstf_last_skip
302   \box_use_drop:N \g__wstf_stuff_box
303   \skip_vertical:N \l__wstf_last_skip
304   \__wstf_ignore_depth:
305 }

\__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。

306 \__wstf_gadd_hook:nn { para/before } { \__wstf_para_before: }
307 \__wstf_gadd_hook:nn { para/begin } { \__wstf_para_begin: }
308 \__wstf_gadd_hook:nn { para/end } { \__wstf_para_end: }

```

```

309 \cs_new_protected_nopar:Npn \__wstf_next_para:
310 {
311   \cs_gset_eq:NN \__wstf_para_before: \__wstf_env_before:
312   \cs_gset_eq:NN \__wstf_para_begin: \__wstf_env_begin:
313   \cs_gset_eq:NN \__wstf_para_end: \__wstf_env_end:
314 }
315 \cs_new_protected_nopar:Npn \__wstf_env_before:
316 { \dim_gset_eq:NN \g__wstf_prevdepth_dim \tex_prevdepth:D }
317 \cs_new_protected_nopar:Npn \__wstf_env_begin:
318 { \begin { wrapstuff@par } }
319 \cs_new_protected_nopar:Npn \__wstf_env_end:
320 { \end { wrapstuff@par } }
321 \cs_new_protected_nopar:Npn \__wstf_clear_para_hook:
322 {
323   \cs_gset_eq:NN \__wstf_para_before: \__wstf_empty:
324   \cs_gset_eq:NN \__wstf_para_begin: \__wstf_empty:
325   \cs_gset_eq:NN \__wstf_para_end: \__wstf_empty:
326 }
327 \cs_new_protected_nopar:Npn \__wstf_empty:
328 { }
329 \cs_new_eq:NN \__wstf_para_before: \__wstf_empty:
330 \cs_new_eq:NN \__wstf_para_begin: \__wstf_empty:
331 \cs_new_eq:NN \__wstf_para_end: \__wstf_empty:

```

wrapstuff@par 内部环境,实现主要功能。

```

332 \NewDocumentEnvironment { wrapstuff@par } { }
333 {
334   \tl_use:N \g__wstf_main_setting_tl
335   \dim_set:Nn \l__wstf_leftsep_dim { \l__wstf_leftsep_tl }
336   \dim_set:Nn \l__wstf_rightsep_dim { \l__wstf_rightsep_tl }
337   \dim_set:Nn \l__wstf_voffset_dim { \l__wstf_voffset_tl }
338   \dim_set:Nn \l__wstf_line_dim { \l__wstf_linewidth_tl }
339   \dim_set:Nn \l__wstf_min_dim { \box_dp:N \strutbox }
340   \dim_set_eq:NN \l__wstf_main_width_dim \l__wstf_line_dim
341   \dim_sub:Nn \l__wstf_line_dim
342   { \tex_leftskip:D + \tex_rightskip:D }
343   \dim_set:Nn \l__wstf_window_dim
344   { \l__wstf_line_dim - \g__wstf_stuff_wd_dim }
345   \fp_compare:nNnTF \l__wstf_ratio_fp > \c_zero_fp
346   {
347     \fp_compare:nNnTF \l__wstf_ratio_fp < \c_one_fp
348     { \__wstf_set_window: }
349     { \__wstf_set_hang_right: }
350   }
351   { \__wstf_set_hang_left: }
352   \int_compare:nNnTF \g__wstf_window_int > \c_zero_int
353   {
354     \int_set_eq:NN \l__wstf_window_int \g__wstf_window_int
355     \int_zero:N \l__wstf_top_int
356   }
357   { \__wstf_set_lines: }
358   \bool_if:NTF \l__wstf_hang_bool
359   {
360     \dim_set_eq:NN \l__wstf_display_dim \l__wstf_window_dim
361     \int_set_eq:NN \l__wstf_window_line_int \l__wstf_window_int
362   }
363   {
364     \dim_set_eq:NN \l__wstf_display_dim \l__wstf_l_dim
365     \int_set:Nn \l__wstf_window_int { \l__wstf_window_int * 2 }
366     \int_set:Nn \l__wstf_window_line_int
367     {
368       \bool_if:NTF \g__wstf_column_right_bool
369       { \l__wstf_window_int / 2 + \g__wstf_column_window_int }
370       { \l__wstf_window_int }
371     }
372   }
373   \cs_gset_eq:NN \__wstf_para_before: \__wstf_empty:

```

```

374 \cs_gset_eq:NN \__wstf_para_begin: \__wstf_empty:
375 \__wstf_save_parshape:
376 \vbox_set:Nw \l__wstf_body_box
377 \__wstf_set_prevdepth:N \g__wstf_prevdepth_dim
378 \__wstf_save_tex_skip:
379 \__wstf_tex_parameter:
380 \__wstf_restore_parshape:
381 \__wstf_display_parameter:
382 \__wstf_make_main_parshape:
383 \para_raw_noindent:
384 }
385 {
386 \__wstf_save_hangfrom:
387 \__wstf_save_tex_skip:
388 \__wstf_group_kludge:
389 \__wstf_tex_parameter:
390 \__wstf_make_main_parshape:
391 \para_raw_end:
392 \int_gset_eq:NN \g__wstf_line_int \tex_prevgraf:D
393 \vbox_set_end:
394 \__wstf_adjust_tex_skip:
395 \cs_gset_eq:NN \__wstf_para_end: \__wstf_empty:
396 \int_compare:nNnTF \g__wstf_line_int > \l__wstf_top_int
397 { \__wstf_build_par: }
398 { \__wstf_put_par: }
399 }
400 \box_new:N \l__wstf_body_box
401 \box_new:N \l__wstf_window_box
402 \int_new:N \l__wstf_window_int
403 \int_new:N \g__wstf_window_int
404 \int_new:N \g__wstf_line_int
405 \int_new:N \l__wstf_window_line_int
406 \int_new:N \g__wstf_column_window_int
407 \dim_new:N \l__wstf_l_dim
408 \dim_new:N \l__wstf_r_dim
409 \dim_new:N \l__wstf_min_dim
410 \dim_new:N \l__wstf_line_dim
411 \dim_new:N \l__wstf_window_dim
412 \dim_new:N \l__wstf_display_dim
413 \dim_new:N \l__wstf_voffset_dim
414 \dim_new:N \l__wstf_leftsep_dim
415 \dim_new:N \l__wstf_rightsep_dim
416 \dim_new:N \g__wstf_window_ht_dim
417 \dim_new:N \l__wstf_main_width_dim
418 \int_new:N \g__wstf_top_int
419 \int_gdecr:N \g__wstf_top_int
420 \bool_new:N \l__wstf_hang_bool

\__wstf_set_hang_left: 421 \cs_new_protected_nopar:Npn \__wstf_set_hang_left:
\__wstf_set_hang_right: 422 {
\__wstf_set_window: 423 \bool_set_true:N \l__wstf_hang_bool
424 \bool_if:NF \g__wstf_hoffset_bool
425 { \__wstf_set_hoffset:NN \l__wstf_rightsep_dim \use:nn }
426 \dim_sub:Nn \l__wstf_window_dim { \l__wstf_rightsep_dim }
427 \dim_zero:N \l__wstf_l_dim
428 \dim_set_eq:NN \l__wstf_r_dim \l__wstf_window_dim
429 \cs_set_eq:NN \__wstf_build_box: \__wstf_build_hang:
430 }
431 \cs_new_protected_nopar:Npn \__wstf_set_hang_right:
432 {
433 \bool_set_true:N \l__wstf_hang_bool
434 \bool_if:NF \g__wstf_hoffset_bool
435 { \__wstf_set_hoffset:NN \l__wstf_leftsep_dim \use:ii:nn }
436 \dim_sub:Nn \l__wstf_window_dim { \l__wstf_leftsep_dim }
437 \dim_zero:N \l__wstf_r_dim
438 \dim_set_eq:NN \l__wstf_l_dim \l__wstf_window_dim
439 \cs_set_eq:NN \__wstf_build_box: \__wstf_build_hang:
440 }

```

```

441 \cs_new_protected_nopar:Npn \__wstf_set_window:
442 {
443   \bool_set_false:N \l__wstf_hang_bool
444   \dim_sub:Nn \l__wstf_window_dim
445     { \l__wstf_leftsep_dim + \l__wstf_rightsep_dim }
446   \dim_set:Nn \l__wstf_l_dim
447     { \__wstf_ratio:Nn \l__wstf_ratio_fp { \l__wstf_window_dim } }
448   \dim_set:Nn \l__wstf_r_dim
449     { \l__wstf_window_dim - \l__wstf_l_dim }
450   \bool_if:NTF \l__wstf_column_bool
451     { \cs_set_eq:NN \__wstf_build_box: \__wstf_build_column: }
452     { \cs_set_eq:NN \__wstf_build_box: \__wstf_build_block: }
453 }
454 \cs_new_protected:Npn \__wstf_set_hoffset:NN #1#2
455 {
456   \bool_gset_true:N \g__wstf_hoffset_bool
457   \dim_set:Nn \l__wstf_hoffset_width_dim
458     { #1 + \g__wstf_stuff_wd_dim }
459   \group_begin:
460     \cs_set_eq:NN \width \l__wstf_hoffset_width_dim
461     \dim_gset:Nn \g__wstf_hoffset_dim { \l__wstf_hoffset_tl }
462   \group_end:
463   \int_compare:nNnF \g__wstf_hoffset_dim = \c_zero_dim
464     {
465       \hbox_gset:Nn \g__wstf_stuff_box
466         {
467           #2 { \tex_kern:D - \g__wstf_hoffset_dim }
468           { \box_use_drop:N \g__wstf_stuff_box }
469         }
470       \dim_add:Nn \l__wstf_window_dim { \g__wstf_hoffset_dim }
471     }
472 }
473 \dim_new:N \g__wstf_hoffset_dim
474 \dim_new:N \l__wstf_hoffset_width_dim
475 \bool_new:N \g__wstf_hoffset_bool
476 \cs_new_protected_nopar:Npn \__wstf_set_lines:
477 {
478   \bool_if:NTF \g__wstf_next_bool
479     { \tl_clear:N \l__wstf_lines_tl }
480     { \tl_set:Nx \l__wstf_lines_tl { \l__wstf_lines_tl } }
481   \int_set:Nn \l__wstf_window_int
482     {
483       \tl_if_empty:NTF \l__wstf_lines_tl
484         { \__wstf_unit:n { \g__wstf_remaining_dim + \l__wstf_min_dim } }
485         { \l__wstf_lines_tl }
486     }
487   \bool_if:NF \g__wstf_next_bool
488     { \__wstf_window_init: }
489   \int_compare:nNnTF \g__wstf_top_int < \c_zero_int
490     {
491       \int_compare:nNnT \l__wstf_top_int < \c_zero_int
492       { \int_zero:N \l__wstf_top_int }
493     }
494     { \int_set_eq:NN \l__wstf_top_int \g__wstf_top_int }
495 }
496 \cs_new_protected_nopar:Npn \__wstf_window_init:
497 {
498   \int_gset_eq:NN \g__wstf_column_window_int \l__wstf_window_int
499   \dim_gset:Nn \g__wstf_window_ht_dim
500     { \tex_baselineskip:D * \g__wstf_column_window_int }
501   \tl_if_empty:NF \l__wstf_lines_tl
502     {
503       \dim_gset:Nn \g__wstf_remaining_dim
504         { \g__wstf_window_ht_dim - \box_ht:N \strutbox }
505       \dim_gset_eq:NN \g__wstf_stuff_ht_dim \g__wstf_remaining_dim
506     }
507 }

```

`\__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`。

```

508 \cs_new_protected_nopar:Npn \__wstf_make_main_parshape:
509 {
510   \dim_compare:nNnTF \g__wstf_hangindent_dim > \c_zero_dim
511   {
512     \int_compare:nNnTF \g__wstf_hangafter_int = \c_one_int
513     { \__wstf_make_hangfrom: }
514     { \__wstf_make_main_parshape_aux: }
515   }
516   { \__wstf_make_main_parshape_aux: }
517 }
518 \cs_new_protected_nopar:Npn \__wstf_make_main_parshape_aux:
519 {
520   \bool_gset_false:N \g__wstf_hangfrom_bool
521   \tex_parshape:D
522   \int_eval:n { \l__wstf_top_int + 1 } ~
523   \prg_replicate:nn
524   { \l__wstf_top_int }
525   { \g__wstf_parshape_indent_dim \g__wstf_parshape_length_dim }
526   \c_zero_dim \c_max_dim
527 }
528 \cs_new_protected_nopar:Npn \__wstf_save_parshape:
529 {
530   \int_gset_eq:NN \g__wstf_parshape_int \tex_parshape:D
531   \int_compare:nNnTF \g__wstf_parshape_int = \c_one_int
532   {
533     \dim_gset:Nn \g__wstf_parshape_indent_dim
534     { \tex_parshapeindent:D \c_one_int }
535     \dim_gset:Nn \g__wstf_parshape_length_dim
536     { \tex_parshapelength:D \c_one_int }
537   }
538   {
539     \int_gzero:N \g__wstf_parshape_int
540     \dim_gzero:N \g__wstf_parshape_indent_dim
541     \dim_gset_eq:NN \g__wstf_parshape_length_dim \l__wstf_main_width_dim
542     \int_gset_eq:NN \g__wstf_hangafter_int \tex_hangafter:D
543     \dim_gset_eq:NN \g__wstf_hangindent_dim \tex_hangindent:D
544   }
545 }
546 \cs_new_protected_nopar:Npn \__wstf_restore_parshape:
547 {
548   \int_compare:nNnTF \g__wstf_parshape_int = \c_one_int
549   {
550     \tex_parshape:D \g__wstf_parshape_int
551     \g__wstf_parshape_indent_dim \g__wstf_parshape_length_dim
552   }
553   { \__wstf_restore_hangfrom: }
554 }
555 \cs_new_protected_nopar:Npn \__wstf_parshape_kern:
556 {
557   \dim_compare:nNnTF \l__wstf_l_dim = \c_zero_dim
558   {
559     \dim_compare:nNnF \g__wstf_parshape_indent_dim = \c_zero_dim
560     { \tex_kern:D - \g__wstf_parshape_indent_dim }
561   }
562 }
563 \cs_new_protected_nopar:Npn \__wstf_make_hangfrom:
564 {
565   \bool_if:NTF \l__wstf_hang_bool
566   { \__wstf_make_hangfrom_aux: }
567   { \__wstf_make_main_parshape_aux: }
568 }
569 \cs_new_protected_nopar:Npn \__wstf_make_hangfrom_aux:
570 {
571   \__wstf_restore_hangfrom:
572   \int_zero:N \tex_parshape:D
573   \bool_gset_true:N \g__wstf_hangfrom_bool

```

```

574 \dim_set_eq:NN \tex_hsize:D \l__wstf_window_dim
575 }
576 \cs_new_protected_nopar:Npn \__wstf_save_hangfrom:
577 {
578   \int_gset_eq:NN \g__wstf_hangafter_int \tex_hangafter:D
579   \dim_gset_eq:NN \g__wstf_hangindent_dim \tex_hangindent:D
580 }
581 \cs_new_protected_nopar:Npn \__wstf_restore_hangfrom:
582 {
583   \int_set_eq:NN \tex_hangafter:D \g__wstf_hangafter_int
584   \dim_set_eq:NN \tex_hangindent:D \g__wstf_hangindent_dim
585 }
586 \bool_new:N \g__wstf_hangfrom_bool
587 \int_new:N \g__wstf_parshape_int
588 \int_new:N \g__wstf_hangafter_int
589 \dim_new:N \g__wstf_hangindent_dim
590 \dim_new:N \g__wstf_parshape_indent_dim
591 \dim_new:N \g__wstf_parshape_length_dim

```

\\_\_wstf\_group\_kludge: L<sup>A</sup>T<sub>E</sub>X 的 \list 环境中, 为了保持 \parshape, \par 被重定义为 {\@@par}。

```

592 \cs_new_protected_nopar:Npn \__wstf_group_kludge:
593 {
594   \scan_stop:
595   \int_compare:nNnTF \tex_currentgrouptype:D = \c_one_int
596   {
597     \c_group_end_token
598     \cs_gset_eq:NN \__wstf_group_begin: \c_group_begin_token
599   }
600   { \cs_gset_eq:NN \__wstf_group_begin: \__wstf_empty: }
601   \legacy_if:nTF { @noitemarg }
602   { \cs_gset_eq:NN \__wstf_set_itemarg: \@noitemargtrue }
603   { \cs_gset_eq:NN \__wstf_set_itemarg: \__wstf_empty: }
604 }
605 \cs_new_eq:NN \__wstf_set_itemarg: \__wstf_empty:
606 \cs_new_eq:NN \__wstf_group_begin: \__wstf_empty:
607 \__wstf_gadd_hook:nn { env/wrapstuff@par/after }
608 {
609   \__wstf_set_itemarg:
610   \__wstf_group_begin:
611 }

```

```

\__wstf_ratio:Nn 612 \cs_new:Npn \__wstf_ratio:Nn #1#2
\__wstf_unit:n 613 { \fp_to_dim:n { #1 \dim_to_fp:n {#2} } }
614 \cs_new:Npn \__wstf_unit:n #1
615 {
616   \fp_eval:n
617   {
618     ceil
619     (
620       \dim_to_decimal_in_unit:nn
621       {#1}
622       { \tex_baselineskip:D }
623     )
624   }
625 }

```

```

\__wstf_save_tex_skip: 626 \cs_new_protected_nopar:Npn \__wstf_save_tex_skip:
\__wstf_tex_parameter: 627 {
628   \skip_gset_eq:NN \g__wstf_left_skip \tex_leftskip:D
629   \skip_gset_eq:NN \g__wstf_right_skip \tex_rightskip:D
630   \skip_gset_eq:NN \g__wstf_parfill_skip \tex_parfillskip:D
631   \skip_gset_eq:NN \g__wstf_baseline_skip \tex_baselineskip:D
632   \skip_gset:Nn \g__wstf_main_left_skip { - \tex_leftskip:D }
633 }
634 \cs_new_protected_nopar:Npn \__wstf_adjust_tex_skip:
635 {
636   \__wstf_adjust_skip:N \g__wstf_left_skip

```

```

637 \_wstf_adjust_skip:N \g\_wstf_right_skip
638 \_wstf_adjust_skip:N \g\_wstf_parfill_skip
639 }
640 \cs_new_protected:Npn \_wstf_adjust_skip:N #1
641 { \skip_gsub:Nn #1 { \dim_eval:n {#1} } }
642 \cs_new_protected_nopar:Npn \_wstf_tex_parameter:
643 {
644 \int_zero:N \tex_clubpenalty:D
645 \int_zero:N \tex_widowpenalty:D
646 \int_zero:N \tex_interlinepenalty:D
647 \int_zero:N \tex_displaywidowpenalty:D
648 \int_zero:N \tex_clubpenalties:D
649 \int_zero:N \tex_widowpenalties:D
650 \int_zero:N \tex_interlinepenalties:D
651 \int_zero:N \tex_displaywidowpenalties:D
652 \skip_set_eq:NN \tex_leftskip:D \g\_wstf_left_skip
653 \skip_set_eq:NN \tex_rightskip:D \g\_wstf_right_skip
654 \skip_set_eq:NN \tex_parfillskip:D \g\_wstf_parfill_skip
655 }
656 \skip_new:N \g\_wstf_left_skip
657 \skip_new:N \g\_wstf_right_skip
658 \skip_new:N \g\_wstf_parfill_skip
659 \skip_new:N \g\_wstf_baseline_skip
660 \skip_new:N \g\_wstf_main_left_skip

```

```

\_wstf_display_parameter: 661 \cs_new_protected_nopar:Npn \_wstf_display_parameter:
662 {
663 \bool_gset_false:N \g\_wstf_display_bool
664 \tex_everydisplay:D \exp_after:wN
665 {
666 \tex_the:D \tex_everydisplay:D
667 \_wstf_test_leqno:
668 \dim_compare:nNnF \tex_displaywidth:D < \c_max_dim
669 {
670 \bool_gset_true:N \g\_wstf_display_bool
671 \dim_set_eq:NN \tex_displaywidth:D \l\_wstf_display_dim
672 }
673 }
674 }
675 \cs_new_eq:NN \_wstf_test_leqno: \_wstf_empty:
676 \bool_new:N \g\_wstf_display_bool

```

```

\_wstf_build_par: 677 \cs_new_protected_nopar:Npn \_wstf_build_par:
678 {
679 \bool_if:NTF \g\_wstf_hangfrom_bool
680 { \_wstf_build_box: }
681 { \_wstf_build_par_aux: }
682 \box_if_empty:NTF \l\_wstf_window_box
683 { \_wstf_put_next_par: }
684 { \_wstf_put_box: }
685 }
686 \cs_new_protected_nopar:Npn \_wstf_build_par_aux:
687 {
688 \_wstf_extract_display_hbox:NN \l\_wstf_body_box \l\_wstf_bottom_box
689 \int_compare:nNnT \l\_wstf_top_int > \c_zero_int
690 { \_wstf_put_body_box: }
691 \box_if_empty:NTF \l\_wstf_bottom_box
692 {
693 \box_if_empty:NF \g\_wstf_display_box
694 { \_wstf_build_display_box: }
695 }
696 { \_wstf_build_body_box: }
697 }
698 \box_new:N \l\_wstf_bottom_box

```

```

\_wstf_put_par: 699 \cs_new_protected_nopar:Npn \_wstf_put_par:
700 {
701 \int_gset:Nn \g\_wstf_top_int

```

```

702     { \l__wstf_top_int - \g__wstf_line_int }
703     \int_gzero:N \g__wstf_window_int
704     \__wstf_put_body_box:
705     \skip_zero:N \tex_parskip:D
706     \para_raw_noindent:
707     \__wstf_next_para:
708   }

\__wstf_put_body_box: 709 \cs_new_protected_nopar:Npn \__wstf_put_body_box:
710   {
711     \para_raw_end:
712     \dim_compare:nNnTF { \box_wd:N \l__wstf_body_box } < \c_max_dim
713       { \__wstf_put_body_aux:N \l__wstf_body_box }
714       {
715         \__wstf_extract_hbox:NN \l__wstf_body_box \l__wstf_bottom_box
716         \__wstf_put_body_aux:N \l__wstf_body_box
717         \box_set_eq_drop:NN \l__wstf_body_box \l__wstf_bottom_box
718       }
719     \para_raw_end:
720   }
721 \cs_new_protected_nopar:Npn \__wstf_put_body_aux:N #1
722   {
723     \dim_gset:Nn \g__wstf_prevdepth_dim { \box_dp:N #1 }
724     \vbox_unpack_drop:N #1
725     \__wstf_set_prevdepth:N \g__wstf_prevdepth_dim
726   }

\__wstf_put_next_par: 727 \cs_new_protected_nopar:Npn \__wstf_put_next_par:
728   {
729     \int_gzero:N \g__wstf_top_int
730     \int_gzero:N \g__wstf_window_int
731     \skip_zero:N \tex_parskip:D
732     \para_raw_noindent:
733     \__wstf_next_para:
734   }

\__wstf_build_display_box: 735 \cs_new_protected_nopar:Npn \__wstf_build_display_box:
736   {
737     \bool_set_true:N \l__wstf_display_bool
738     \bool_if:NTF \g__wstf_amsmath_bool
739       { \__wstf_build_display_amsmath: }
740       { \__wstf_build_display_normal: }
741     \box_if_empty:N \l__wstf_body_box
742       { \__wstf_build_display_auxi: }
743       { \__wstf_build_display_auxii: }
744   }
745 \cs_new_protected_nopar:Npn \__wstf_build_display_amsmath:
746   {
747     \vbox_gset:Nn \g__wstf_equation_box
748     {
749       \skip_vertical:n { - \g__wstf_display_pre_skip }
750       \vbox_unpack_drop:N \g__wstf_display_box
751       \skip_gset_eq:NN \g__wstf_pos_skip \tex_lastskip:D
752       \tex_unskip:D
753       \int_gset_eq:NN \g__wstf_pos_int \tex_lastpenalty:D
754       \tex_unpenalty:D
755       \skip_gadd:Nn \g__wstf_pos_skip { \tex_lastskip:D }
756       \tex_unskip:D
757       \tex_unpenalty:D
758     }
759     \box_gset_wd:Nn \g__wstf_equation_box
760     { \l__wstf_display_dim }
761     \vbox_gset:Nn \g__wstf_display_box
762     {
763       \tex_penalty:D \g__wstf_display_pre_int
764       \skip_vertical:N \g__wstf_display_pre_skip
765     }
766     \skip_gset_eq:NN \g__wstf_pre_skip \g__wstf_display_pre_skip

```

```

767 }
768 \cs_new_protected_nopar:Npn \__wstf_build_display_normal:
769 {
770   \vbox_gset:Nn \g__wstf_display_box
771   {
772     \vbox_unpack_drop:N \g__wstf_display_box
773     \skip_gset_eq:NN \g__wstf_pos_skip \tex_lastskip:D
774     \tex_unskip:D
775     \int_gset_eq:NN \g__wstf_pos_int \tex_lastpenalty:D
776     \tex_unpenalty:D
777     \box_gset_to_last:N \g__wstf_equation_box
778     \skip_gset_eq:NN \g__wstf_pre_skip \tex_lastskip:D
779     \tex_unskip:D
780     \skip_gadd:Nn \g__wstf_pre_skip { \tex_lastskip:D }
781     \tex_unskip:D
782     \skip_vertical:N \g__wstf_pre_skip
783   }
784 }
785 \cs_new_protected_nopar:Npn \__wstf_build_display_auxi:
786 {
787   \bool_if:NTF \g__wstf_amsmath_bool
788   { \box_set_eq_drop:NN \l__wstf_window_box \g__wstf_equation_box }
789   {
790     \hbox_set_to_wd:Nnn \l__wstf_window_box
791     { \l__wstf_display_dim }
792     {
793       \tex_hss:D
794       \__wstf_adjust_equation:
795       \box_use_drop:N \g__wstf_equation_box
796       \tex_hss:D
797     }
798   }
799   \dim_gset:Nn \g__wstf_ht_dim { \box_ht:N \l__wstf_window_box }
800   \dim_add:Nn \l__wstf_voffset_dim
801   { \box_ht:N \g__wstf_display_box / 2 }
802 }
803 \cs_new_protected_nopar:Npn \__wstf_build_display_auxii:
804 {
805   \box_if_horizontal:NTF \l__wstf_body_box
806   {
807     \box_set_eq:NN \l__wstf_bottom_box \l__wstf_body_box
808     \__wstf_build_display_auxiii:
809   }
810   {
811     \__wstf_extract_hbox:NN \l__wstf_body_box \l__wstf_bottom_box
812     \str_if_eq:eeTF
813     {
814       \dim_eval:n { \box_ht:N \l__wstf_body_box }
815       \dim_eval:n { \box_dp:N \l__wstf_body_box }
816       \dim_eval:n { \box_ht:N \l__wstf_bottom_box }
817       \dim_eval:n { \box_dp:N \l__wstf_bottom_box }
818     }
819     { \c__wstf_zero_pt_str }
820     {
821       \vbox_unpack_drop:N \l__wstf_body_box
822       \box_clear:N \l__wstf_bottom_box
823       \__wstf_build_display_auxi:
824     }
825     { \__wstf_build_display_auxiii: }
826   }
827 }
828 \str_const:Nx \c__wstf_zero_pt_str
829 {
830   \dim_use:N \c_zero_dim
831   \dim_use:N \c_zero_dim
832   \dim_use:N \c_zero_dim
833   \dim_use:N \c_zero_dim

```

```

834 }
835 \cs_new_protected_nopar:Npn \__wstf_build_display_auxiii:
836 {
837   \bool_set_true:N \l__wstf_attach_equation_bool
838   \bool_if:NTF \g__wstf_amsmath_bool
839   { \box_set_eq_drop:NN \l__wstf_display_box \g__wstf_display_box }
840   {
841     \box_gclear:N \g__wstf_display_box
842     \__wstf_adjust_equation:
843   }
844   \__wstf_build_body_box:
845 }
846 \cs_new_protected_nopar:Npn \__wstf_attach_equation:N
847 {
848   \bool_if:NTF \g__wstf_amsmath_bool
849   { \__wstf_attach_equation_amsmath:N }
850   { \__wstf_attach_equation_normal:N }
851 }
852 \cs_new_protected:Npn \__wstf_attach_equation_amsmath:N #1
853 {
854   \vbox_set:Nn #1
855   {
856     \box_use:N #1
857     \__wstf_ignore_depth:
858     \vbox_unpack_drop:N \l__wstf_display_box
859     \skip_vertical:n
860     { \g__wstf_display_pre_dim - \box_dp:N #1 }
861     \box_use_drop:N \g__wstf_equation_box
862   }
863 }
864 \cs_new_protected:Npn \__wstf_attach_equation_normal:N #1
865 {
866   \vbox_set:Nn #1
867   {
868     \__wstf_tex_parameter:
869     \dim_set_eq:NN \tex_hsize:D \l__wstf_display_dim
870     \para_raw_noindent:
871     \hbox_unpack_drop:N #1 \tex_unskip:D
872     \__wstf_insert_equation:
873     \para_raw_end:
874     \skip_gset_eq:NN \g__wstf_pos_skip \tex_lastskip:D
875     \tex_unskip:D
876     \int_gset_eq:NN \g__wstf_pos_int \tex_lastpenalty:D
877     \tex_unpenalty:D
878   }
879 }
880 \cs_new_protected_nopar:Npn \__wstf_insert_equation:
881 {
882   \c_math_toggle_token \c_math_toggle_token
883   \dim_compare:nNnTF \tex_displaywidth:D = \l__wstf_display_dim
884   { \box_use_drop:N \g__wstf_equation_box }
885   {
886     \bool_if:NTF \g__wstf_eqnum_bool
887     { \__wstf_repack_equation: }
888     { \box_use_drop:N \g__wstf_equation_box }
889   }
890   \c_math_toggle_token \c_math_toggle_token
891 }
892 \cs_new_protected_nopar:Npn \__wstf_repack_equation:
893 {
894   \box_gclear:N \g__wstf_equation_box
895   \box_use_drop:N \g__wstf_eqbody_box
896   \bool_if:NTF \g__wstf_leqno_bool
897   { \tex_leqno:D }
898   { \tex_eqno:D }
899   \box_use_drop:N \g__wstf_eqnum_box
900 }

```

```

901 \cs_new_protected_nopar:Npn \__wstf_adjust_equation:
902 {
903   \__wstf_test_eqnum:
904   \bool_if:NT \g__wstf_eqnum_bool
905     { \__wstf_adjust_equation_width: }
906 }
907 \cs_new_protected_nopar:Npn \__wstf_test_eqnum:
908 {
909   \hbox_set:Nn \l__wstf_last_box
910   {
911     \bool_gset_false:N \g__wstf_eqnum_bool
912     \hbox_unpack:N \g__wstf_equation_box
913     \__wstf_if_last_hlist:F { \use_none_delimit_by_q_stop:w }
914     \box_gset_to_last:N \g__wstf_eqnum_box
915     \__wstf_if_last_kern:F { \use_none_delimit_by_q_stop:w }
916     \tex_unkern:D
917     \__wstf_if_last_hlist:F { \use_none_delimit_by_q_stop:w }
918     \box_gset_to_last:N \g__wstf_eqbody_box
919     \__wstf_if_last_none:F { \use_none_delimit_by_q_stop:w }
920     \bool_gset_true:N \g__wstf_eqnum_bool
921     \use_none_delimit_by_q_stop:w \q_stop
922   }
923 }
924 \cs_new_protected_nopar:Npn \__wstf_adjust_equation_width:
925 {
926   \bool_if:NTF \g__wstf_leqno_bool
927     { \__wstf_adjust_leqno: }
928     {
929       \box_gset_wd:Nn \g__wstf_equation_box
930       { \box_wd:N \g__wstf_eqbody_box }
931     }
932 }
933 \cs_new_protected_nopar:Npn \__wstf_adjust_leqno:
934 {
935   \box_set_eq_drop:NN \l__wstf_last_box \g__wstf_eqnum_box
936   \box_gset_eq_drop:NN \g__wstf_eqnum_box \g__wstf_eqbody_box
937   \box_gset_eq_drop:NN \g__wstf_eqbody_box \l__wstf_last_box
938   \hbox_gset:Nn \g__wstf_equation_box
939   {
940     \skip_horizontal:n
941     {
942       \box_wd:N \g__wstf_eqbody_box
943       - \box_wd:N \g__wstf_equation_box
944     }
945     \box_use_drop:N \g__wstf_equation_box
946   }
947 }
948 \box_new:N \g__wstf_eqbody_box
949 \box_new:N \g__wstf_eqnum_box
950 \box_new:N \g__wstf_equation_box
951 \box_new:N \l__wstf_display_box
952 \int_new:N \g__wstf_pos_int
953 \skip_new:N \g__wstf_pos_skip
954 \bool_new:N \g__wstf_eqnum_bool
955 \bool_new:N \g__wstf_leqno_bool
956 \bool_new:N \l__wstf_display_bool
957 \bool_new:N \l__wstf_attach_equation_bool
958 \cs_new_protected_nopar:Npn \__wstf_add_pos_skip:
959 {
960   \bool_lazy_or:nnTF
961     { \g__wstf_right_move_bool }
962     { \int_compare_p:nNn \g__wstf_window_int > \c_zero_int }
963     {
964       \tex_vadjust:D
965       {
966         \tex_penalty:D \c__wstf_nobreak_int
967         \bool_if:NT \l__wstf_display_bool

```

```

968         { \skip_vertical:N \g__wstf_pos_skip }
969     }
970 }
971 {
972     \bool_if:NT \l__wstf_display_bool
973     {
974         \tex_vadjust:D
975         {
976             \tex_penalty:D \g__wstf_pos_int
977             \skip_vertical:N \g__wstf_pos_skip
978         }
979     }
980 }
981 \int_gzero:N \g__wstf_pos_int
982 \skip_gzero:N \g__wstf_pos_skip
983 }

```

```

\__wstf_build_body_box: 984 \cs_new_protected_nopar:Npn \__wstf_build_body_box:
985 {
986     \box_set_eq:NN \l__wstf_save_body_box \l__wstf_bottom_box
987     \__wstf_build_window:
988     \int_compare:nNnTF \g__wstf_line_int > \l__wstf_window_line_int
989     { \__wstf_extract_hbox:NN \l__wstf_body_box \l__wstf_bottom_box }
990     { \box_clear:N \l__wstf_bottom_box }
991     \box_if_empty:NF \l__wstf_bottom_box
992     { \bool_set_false:N \l__wstf_attach_equation_bool }
993     \box_clear:N \l__wstf_window_box
994     \__wstf_build_box:
995 }
996 \box_new:N \l__wstf_save_body_box

```

```

\__wstf_build_body_box: 997 \cs_new_protected_nopar:Npn \__wstf_build_window:
998 {
999     \vbox_set:Nn \l__wstf_body_box
1000     {
1001         \__wstf_tex_parameter:
1002         \__wstf_make_parshape:
1003         \__wstf_column_penalties:
1004         \dim_zero:N \tex_emergencystretch:D
1005         \dim_set_eq:NN \tex_hfuzz:D \c_max_dim
1006         \dim_set_eq:NN \tex_vfuzz:D \c_max_dim
1007         \int_set_eq:NN \tex_hbadness:D \c_max_int
1008         \int_set_eq:NN \tex_vbadness:D \c_max_int
1009         \int_set:Nn \tex_tolerance:D { 1000 }
1010         \para_raw_noindent:
1011         \hbox_unpack_drop:N \l__wstf_bottom_box
1012         \para_raw_end:
1013         \int_gset_eq:NN \g__wstf_line_int \tex_prevgraf:D
1014     }
1015 }

```

```

\__wstf_make_parshape: 1016 \cs_new_protected_nopar:Npn \__wstf_make_parshape:
1017 {
1018     \tex_parshape:D
1019     \int_eval:n { \l__wstf_window_line_int + 1 } ~
1020     \bool_if:NTF \l__wstf_hang_bool
1021     {
1022         \prg_replicate:nn
1023         { \l__wstf_window_int }
1024         { \c_zero_dim \l__wstf_window_dim }
1025     }
1026     {
1027         \bool_if:NTF \l__wstf_column_bool
1028         {
1029             \prg_replicate:nn
1030             { \l__wstf_window_int / 2 }
1031             { \c_zero_dim \l__wstf_l_dim }
1032             \prg_replicate:nn

```

```

1033         {
1034             \bool_if:NTF \g__wstf_column_right_bool
1035             { \g__wstf_column_window_int }
1036             { \l__wstf_window_int / 2 }
1037         }
1038         { \c_zero_dim \l__wstf_r_dim }
1039     }
1040     {
1041         \prg_replicate:nn
1042         { \l__wstf_window_int / 2 }
1043         {
1044             \c_zero_dim \l__wstf_l_dim
1045             \c_zero_dim \l__wstf_r_dim
1046         }
1047     }
1048 }
1049 \c_zero_dim \c_max_dim
1050 }

```

```

__wstf_column_penalties: 1051 \cs_new_protected_nopar:Npn \__wstf_column_penalties:
1052 {
1053     \bool_if:NF \l__wstf_hang_bool
1054     {
1055         \bool_if:NT \l__wstf_column_bool
1056         { \__wstf_column_penalties_aux: }
1057     }
1058 }
1059 \cs_new_protected_nopar:Npn \__wstf_column_penalties_aux:
1060 {
1061     \tex_interlinepenalties:D
1062     \int_eval:n { \l__wstf_window_int / 2 + \c_one_int } ~
1063     \prg_replicate:nn
1064     { \l__wstf_window_int / 2 - \c_one_int }
1065     { \c__wstf_nobreak_int }
1066     \c__wstf_break_int
1067     \c_zero_int
1068 }

```

```

__wstf_build_box: 1069 \cs_new_protected_nopar:Npn \__wstf_build_block:
__wstf_build_block: 1070 {
1071     \__wstf_build_block_auxi:
1072     \vbox_set:Nn \l__wstf_window_box
1073     {
1074         \__wstf_tex_parameter:
1075         \dim_set_eq:NN \tex_hsize:D \l__wstf_line_dim
1076         \para_raw_noindent:
1077         \hbox_unpack_drop:N \g__wstf_line_box
1078         \para_raw_end:
1079     }
1080     \bool_if:NT \l__wstf_attach_equation_bool
1081     {
1082         \box_set_ht:Nn \l__wstf_window_box
1083         { \box_ht_plus_dp:N \l__wstf_window_box - \g__wstf_dp_dim }
1084         \box_set_dp:Nn \l__wstf_window_box { \g__wstf_dp_dim }
1085     }
1086 }
1087 \cs_new_protected_nopar:Npn \__wstf_build_block_auxi:
1088 {
1089     \vbox_set:Nn \l__wstf_body_box
1090     {
1091         \vbox_unpack_drop:N \l__wstf_body_box
1092         \bool_lazy_and:nnTF
1093         { \box_if_empty_p:N \l__wstf_bottom_box }
1094         { \int_if_odd_p:n { \g__wstf_line_int } }
1095         { \box_set_eq:NN \l__wstf_r_box \l__wstf_empty_box }
1096         {
1097             \box_set_to_last:N \l__wstf_r_box
1098             \tex_unskip:D \tex_unpenalty:D

```

```

1099     }
1100     \box_set_to_last:N \l__wstf_l_box
1101     \tex_unskip:D \tex_unpenalty:D
1102     \hbox_gset:Nn \g__wstf_line_box
1103     {
1104         \bool_if:NT \l__wstf_attach_equation_bool
1105         { \__wstf_build_block_attach: }
1106         \box_use:N \l__wstf_l_box
1107         \tex_hfill:D
1108         \box_use:N \l__wstf_r_box
1109     }
1110     \__wstf_build_block_auxii:
1111 }
1112 }
1113 \cs_new_protected_nopar:Npn \__wstf_build_block_auxii:
1114 {
1115     \int_case:nnTF
1116     { \tex_lastnodetype:D }
1117     {
1118         { \c__wstf_none_node } { }
1119         { \c__wstf_whatsit_node } { }
1120     }
1121     { \__wstf_build_block_finalise: }
1122     { \__wstf_build_block_auxiii: }
1123 }
1124 \cs_new_protected_nopar:Npn \__wstf_build_block_auxiii:
1125 {
1126     \box_set_to_last:N \l__wstf_r_box
1127     \tex_unskip:D \tex_unpenalty:D
1128     \box_set_to_last:N \l__wstf_l_box
1129     \tex_unskip:D \tex_unpenalty:D
1130     \hbox_gset:Nn \g__wstf_line_box
1131     {
1132         \box_use:N \l__wstf_l_box
1133         \tex_hfill:D
1134         \box_use:N \l__wstf_r_box
1135         \tex_penalty:D \c__wstf_break_int
1136         \hbox_unpack_drop:N \g__wstf_line_box
1137     }
1138     \__wstf_build_block_auxii:
1139 }
1140 \cs_new_protected_nopar:Npn \__wstf_build_block_attach:
1141 {
1142     \box_set_eq:NN \l__wstf_last_box \l__wstf_l_box
1143     \__wstf_attach_equation:N \l__wstf_last_box
1144     \dim_gset:Nn \g__wstf_dp_dim { \box_dp:N \l__wstf_last_box }
1145     \hbox_set:Nn \l__wstf_l_box
1146     {
1147         \box_move_down:nn
1148         { \box_ht:N \l__wstf_last_box - \box_ht:N \l__wstf_l_box }
1149         { \box_use_drop:N \l__wstf_last_box }
1150     }
1151 }
1152 \cs_new_protected_nopar:Npn \__wstf_build_block_finalise:
1153 {
1154     \dim_gset:Nn \g__wstf_ht_dim
1155     {
1156         \dim_max:nn
1157         { \box_ht:N \l__wstf_l_box }
1158         { \box_ht:N \l__wstf_r_box }
1159     }
1160 }
1161 \dim_new:N \g__wstf_dp_dim
1162 \dim_new:N \g__wstf_ht_dim
1163 \box_new:N \l__wstf_l_box
1164 \box_new:N \l__wstf_r_box
1165 \box_new:N \g__wstf_line_box

```

```

1166 \box_new:N \l__wstf_empty_box
1167 \hbox_set:Nn \l__wstf_empty_box { }
1168 \int_const:Nn \c__wstf_break_int { -10000 }
1169 \int_const:Nn \c__wstf_nobreak_int { 10000 }

\__wstf_build_column_fuzzy: 1170 \cs_new_protected_nopar:Npn \__wstf_build_column_fuzzy:
1171 {
1172   \hbox_set_to_wd:Nnn \l__wstf_window_box
1173   { \l__wstf_line_dim }
1174   {
1175     \skip_zero:N \tex_splittopskip:D
1176     \dim_set_eq:NN \tex_vfuzz:D \c_max_dim
1177     \int_set_eq:NN \tex_vbadness:D \c_max_int
1178     \__wstf_build_column_aux:
1179     \box_if_empty:NT \l__wstf_bottom_box
1180     { \__wstf_build_column_fuzzy_aux: }
1181     \dim_gset:Nn \g__wstf_ht_dim { \box_ht:N \l__wstf_l_box }
1182     \vbox_set:Nn \l__wstf_l_box
1183     {
1184       \vbox_unpack_drop:N \l__wstf_l_box
1185       \bool_if:NT \l__wstf_attach_equation_bool
1186       {
1187         \box_set_to_last:N \l__wstf_last_box
1188         \__wstf_attach_equation:N \l__wstf_last_box
1189         \vbox_unpack_drop:N \l__wstf_last_box
1190       }
1191     }
1192     \box_use:N \l__wstf_l_box
1193     \tex_hfil:D
1194     \box_move_up:nn
1195     { \box_ht:N \l__wstf_l_box - \box_ht:N \l__wstf_r_box }
1196     { \box_use_drop:N \l__wstf_r_box }
1197   }
1198 }
1199 \cs_new_protected_nopar:Npn \__wstf_build_column_aux:
1200 {
1201   \vbox_set_split_to_ht:NNn \l__wstf_l_box \l__wstf_body_box
1202   { \c_zero_dim }
1203   \vbox_set_top:Nn \l__wstf_l_box
1204   { \vbox_unpack_drop:N \l__wstf_l_box }
1205   \box_set_eq_drop:NN \l__wstf_r_box \l__wstf_body_box
1206 }
1207 \cs_new_protected_nopar:Npn \__wstf_build_column_fuzzy_aux:
1208 {
1209   \dim_compare:nNnTF
1210   {
1211     \box_ht_plus_dp:N \l__wstf_r_box -
1212     \box_ht_plus_dp:N \l__wstf_l_box
1213   }
1214   >
1215   { \l__wstf_min_dim }
1216   {
1217     \box_if_empty:NF \l__wstf_last_l_box
1218     {
1219       \box_set_eq_drop:NN \l__wstf_l_box \l__wstf_last_l_box
1220       \box_set_eq_drop:NN \l__wstf_r_box \l__wstf_last_r_box
1221     }
1222   }
1223   { \__wstf_rebuild_window: }
1224 }
1225 \cs_new_protected_nopar:Npn \__wstf_rebuild_window:
1226 {
1227   \int_compare:nNnT \l__wstf_window_int > { 2 }
1228   {
1229     \int_sub:Nn \l__wstf_window_int { 2 }
1230     \box_set_eq_drop:NN \l__wstf_last_l_box \l__wstf_l_box
1231     \box_set_eq_drop:NN \l__wstf_last_r_box \l__wstf_r_box
1232     \box_set_eq:NN \l__wstf_bottom_box \l__wstf_save_body_box

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1233     \int_set_eq:NN \l__wstf_window_line_int \l__wstf_window_int
1234     \__wstf_build_window:
1235     \__wstf_build_column_aux:
1236     \__wstf_build_column_fuzzy_aux:
1237 }
1238 }

\__wstf_build_column_strict: 1239 \cs_new_protected_nopar:Npn \__wstf_build_column_strict:
1240 {
1241     \group_begin:
1242     \skip_zero:N \tex_splittopskip:D
1243     \dim_set_eq:NN \tex_vfuzz:D \c_max_dim
1244     \int_set_eq:NN \tex_vbadness:D \c_max_int
1245     \__wstf_build_column_aux:
1246     \box_if_empty:NTF \l__wstf_r_box
1247     { \__wstf_build_column_strict_auxi: }
1248     {
1249         \box_if_empty:NTF \l__wstf_bottom_box
1250         { \__wstf_build_column_strict_auxii: }
1251         {
1252             \bool_if:NTF \g__wstf_column_right_bool
1253             { \__wstf_build_column_strict_auxiii: }
1254             { \__wstf_build_column_strict_auxiv: }
1255         }
1256     }
1257     \group_end:
1258     \box_set_eq_drop:NN \l__wstf_window_box \g__wstf_window_box
1259 }
1260 \cs_new_protected_nopar:Npn \__wstf_build_column_strict_auxi:
1261 {
1262     \__wstf_repack_left_box:
1263     \bool_if:NT \l__wstf_attach_equation_bool
1264     { \__wstf_column_attach:N \l__wstf_l_box }
1265     \box_gset_eq_drop:NN \g__wstf_window_box \l__wstf_l_box
1266     \bool_gset_true:N \g__wstf_column_right_bool
1267     \bool_if:NF \g__wstf_first_save_bool
1268     {
1269         \bool_gset_true:N \g__wstf_first_save_bool
1270         \dim_gset:Nn \g__wstf_first_sep_dim
1271         { \tex_baselineskip:D - \g__wstf_ht_dim }
1272         \dim_gset_eq:NN \g__wstf_first_dp_dim \g__wstf_prevdepth_dim
1273     }
1274     \int_case:nnT { \g__wstf_window_int }
1275     {
1276         { \c_zero_int } { }
1277         { \g__wstf_line_int } { }
1278     }
1279     { \__wstf_column_move_entire_aux: }
1280 }
1281 \cs_new_protected_nopar:Npn \__wstf_column_move_entire_aux:
1282 {
1283     \bool_gset_true:N \g__wstf_entire_bool
1284     \bool_gset_true:N \g__wstf_next_hang_bool
1285 }
1286 \cs_new_protected_nopar:Npn \__wstf_column_move_entire:
1287 {
1288     \dim_gsub:Nn \g__wstf_first_sep_dim
1289     { \box_dp:N \l__wstf_window_box }
1290     \bool_gset_false:N \g__wstf_entire_bool
1291     \dim_gzero:N \g__wstf_column_right_ht_dim
1292     \dim_gset_eq:NN \g__wstf_prevdepth_dim \g__wstf_first_dp_dim
1293     \__wstf_column_right_move_set:nn
1294     { \g__wstf_stuff_ht_dim }
1295     { \g__wstf_window_ht_dim }
1296     \int_gset_eq:NN \g__wstf_window_int \g__wstf_column_window_int
1297 }
1298 \cs_new_protected:Npn \__wstf_column_right_move_set:nn #1#2
1299 {

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1300 \bool_gset_true:N \g__wstf_right_move_bool
1301 \bool_gset_true:N \g__wstf_first_set_bool
1302 \tl_gput_right:Nn \g__wstf_main_setting_tl
1303 {
1304   \bool_if:NTF \g__wstf_first_set_bool
1305   {
1306     \bool_gset_false:N \g__wstf_first_set_bool
1307     \bool_set_true:N \l__wstf_first_move_bool
1308   }
1309   { \bool_set_false:N \l__wstf_first_move_bool }
1310   \fp_zero:N \l__wstf_ratio_fp
1311 }
1312 \__wstf_make_next_stuff:nn
1313 { \l__wstf_line_dim - \l__wstf_r_dim - \l__wstf_rightsep_dim }
1314 {#1}
1315 \dim_gset:Nn \g__wstf_column_left_dim {#2}
1316 \int_gzero:N \g__wstf_top_int
1317 }
1318 \cs_new_protected_nopar:Npn \__wstf_build_column_strict_auxii:
1319 {
1320   \bool_gset_false:N \g__wstf_entire_bool
1321   \__wstf_repack_left_box:
1322   \bool_if:NT \l__wstf_attach_equation_bool
1323   { \__wstf_column_attach:N \l__wstf_r_box }
1324   \dim_gset:Nn \g__wstf_hang_ht_dim
1325   {
1326     \g__wstf_stuff_ht_dim - \tex_baselineskip:D *
1327     \__wstf_unit:n { \box_ht_plus_dp:N \l__wstf_r_box }
1328     - \g__wstf_pos_skip
1329   }
1330   \dim_compare:nNnTF \g__wstf_hang_ht_dim > \c_zero_dim
1331   { \__wstf_column_move_right: }
1332   { \__wstf_column_put_right: }
1333   \box_gset_ht:Nn \g__wstf_window_box { \box_ht:N \l__wstf_l_box }
1334   \box_gset_dp:Nn \g__wstf_window_box { \box_dp:N \l__wstf_l_box }
1335 }
1336 \cs_new_protected_nopar:Npn \__wstf_column_move_right:
1337 {
1338   \int_compare:nNnTF \g__wstf_window_int > \c_zero_int
1339   {
1340     \dim_gset:Nn \g__wstf_column_left_dim
1341     {
1342       \g__wstf_window_ht_dim
1343       - \g__wstf_first_sep_dim
1344       - \box_ht:N \l__wstf_r_box
1345     }
1346     \__wstf_next_hang_para:
1347   }
1348   {
1349     \dim_gset:Nn \g__wstf_column_left_dim
1350     {
1351       \box_ht:N \l__wstf_l_box
1352       - \box_ht:N \l__wstf_r_box
1353     }
1354     \dim_gset:Nn \g__wstf_first_sep_dim
1355     { \tex_baselineskip:D - \g__wstf_ht_dim }
1356     \bool_gset_true:N \g__wstf_right_move_bool
1357     \bool_gset_true:N \g__wstf_next_hang_bool
1358   }
1359   \hbox_gset_to_wd:Nnn \g__wstf_window_box
1360   { \l__wstf_line_dim }
1361   {
1362     \box_use:N \l__wstf_l_box
1363     \tex_hfil:D
1364     \box_move_up:nn
1365     { \g__wstf_column_left_dim }
1366     { \box_use:N \l__wstf_r_box }

```

```

1367     }
1368     \dim_gset:Nn \g__wstf_column_right_ht_dim
1369     { \box_ht:N \l__wstf_r_box + \g__wstf_pos_skip }
1370   }
1371   \cs_new_protected_nopar:Npn \__wstf_column_put_right:
1372   {
1373     \hbox_gset_to_wd:Nnn \g__wstf_window_box
1374     { \l__wstf_line_dim }
1375     {
1376       \box_use:N \l__wstf_l_box
1377       \tex_hfil:D
1378       \box_move_up:nn
1379       {
1380         \int_compare:nNnTF \g__wstf_window_int > \c_zero_int
1381         { \g__wstf_window_ht_dim - \g__wstf_first_sep_dim }
1382         { \box_ht:N \l__wstf_l_box }
1383         - \box_ht:N \l__wstf_r_box
1384       }
1385       { \box_use:N \l__wstf_r_box }
1386     }
1387     \skip_gzero:N \g__wstf_pos_skip
1388   }
1389   \cs_new_protected_nopar:Npn \__wstf_next_hang_para:
1390   {
1391     \bool_if:NTF \g__wstf_entire_bool
1392     { \__wstf_column_move_entire: }
1393     {
1394       \__wstf_column_right_move_set:nn
1395       { \g__wstf_hang_ht_dim }
1396       { \g__wstf_column_left_dim }
1397       \int_gzero:N \g__wstf_window_int
1398     }
1399     \bool_gset_false:N \g__wstf_next_hang_bool
1400   }
1401   \cs_new_protected_nopar:Npn \__wstf_build_column_strict_auxiii:
1402   {
1403     \bool_gset_false:N \g__wstf_column_right_bool
1404     \__wstf_repack_left_box:
1405     \hbox_gset_to_wd:Nnn \g__wstf_window_box
1406     { \l__wstf_line_dim }
1407     {
1408       \box_use:N \l__wstf_l_box
1409       \tex_hfil:D
1410       \box_use:N \l__wstf_r_box
1411     }
1412     \box_gset_ht:Nn \g__wstf_window_box
1413     { \box_ht:N \l__wstf_l_box }
1414   }
1415   \cs_new_protected_nopar:Npn \__wstf_build_column_strict_auxiv:
1416   {
1417     \__wstf_repack_left_box:
1418     \hbox_gset_to_wd:Nnn \g__wstf_window_box
1419     { \l__wstf_line_dim }
1420     {
1421       \box_use:N \l__wstf_l_box
1422       \tex_hfil:D
1423       \box_move_up:nn
1424       { \box_ht:N \l__wstf_l_box - \box_ht:N \l__wstf_r_box }
1425       { \box_use_drop:N \l__wstf_r_box }
1426     }
1427   }
1428   \cs_new_protected_nopar:Npn \__wstf_repack_left_box:
1429   {
1430     \dim_gset:Nn \g__wstf_ht_dim { \box_ht:N \l__wstf_l_box }
1431     \vbox_set:Nn \l__wstf_l_box
1432     { \vbox_unpack_drop:N \l__wstf_l_box }
1433   }

```

```

1434 \cs_new_protected_nopar:Npn \__wstf_column_attach:N #1
1435 {
1436   \vbox_set:Nn #1
1437   {
1438     \vbox_unpack_drop:N #1
1439     \box_set_to_last:N \l__wstf_last_box
1440     \__wstf_attach_equation:N \l__wstf_last_box
1441     \vbox_unpack_drop:N \l__wstf_last_box
1442   }
1443 }
1444 \box_new:N \l__wstf_last_l_box
1445 \box_new:N \l__wstf_last_r_box
1446 \box_new:N \g__wstf_window_box
1447 \dim_new:N \g__wstf_fake_wd_dim
1448 \dim_new:N \g__wstf_first_dp_dim
1449 \dim_new:N \g__wstf_first_sep_dim
1450 \dim_new:N \g__wstf_column_left_dim
1451 \dim_new:N \g__wstf_column_right_ht_dim
1452 \bool_new:N \g__wstf_entire_bool
1453 \bool_new:N \g__wstf_next_hang_bool
1454 \bool_new:N \g__wstf_first_save_bool
1455 \bool_new:N \g__wstf_column_right_bool
1456 \bool_new:N \l__wstf_column_strict_bool
1457 \bool_new:N \g__wstf_first_set_bool
1458 \bool_new:N \l__wstf_first_move_bool
1459 \bool_new:N \g__wstf_right_move_bool

__wstf_build_box: 1460 \bool_new:N \l__wstf_column_bool
__wstf_build_column: 1461 \cs_new_eq:NN \__wstf_build_column: \__wstf_build_column_strict:
1462 \cs_new_eq:NN \__wstf_build_box: \__wstf_build_column:

__wstf_build_hang: 1463 \cs_new_protected_nopar:Npn \__wstf_build_hang:
1464 {
1465   \bool_if:NTF \g__wstf_hangfrom_bool
1466   { \__wstf_build_hangfrom: }
1467   {
1468     \vbox_set_top:Nn \l__wstf_window_box
1469     { \vbox_unpack:N \l__wstf_body_box }
1470     \dim_gset:Nn \g__wstf_ht_dim { \box_ht:N \l__wstf_window_box }
1471   }
1472   \bool_if:NTF \l__wstf_attach_equation_bool
1473   {
1474     \vbox_set:Nn \l__wstf_window_box
1475     {
1476       \vbox_unpack_drop:N \l__wstf_window_box
1477       \box_set_to_last:N \l__wstf_last_box
1478       \__wstf_attach_equation:N \l__wstf_last_box
1479       \vbox_unpack_drop:N \l__wstf_last_box
1480     }
1481   }
1482   { \box_set_eq_drop:NN \l__wstf_window_box \l__wstf_body_box }
1483   \dim_compare:nNnTF \g__wstf_column_left_dim > \c_zero_dim
1484   { \__wstf_build_hang_aux: }
1485   { \bool_gset_false:N \g__wstf_move_hang_bool }
1486 }
1487 \cs_new_protected_nopar:Npn \__wstf_build_hang_aux:
1488 {
1489   \dim_set:Nn \l__wstf_shift_dim
1490   {
1491     \dim_max:nn
1492     { \box_ht:N \l__wstf_window_box }
1493     { \tex_baselineskip:D * \g__wstf_line_int }
1494   } + \tex_parskip:D
1495 }
1496 \dim_gsub:Nn \g__wstf_column_left_dim { \l__wstf_shift_dim }
1497 \dim_compare:nNnTF \g__wstf_column_left_dim > \c_zero_dim
1498 {
1499   \box_if_empty:NTF \l__wstf_bottom_box

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1500         { \bool_if:NT \g__wstf_right_move_bool { \__wstf_set_next_hang: } }
1501         { \bool_gset_false:N \g__wstf_move_hang_bool }
1502     }
1503     { \bool_gset_false:N \g__wstf_move_hang_bool }
1504 }
1505 \cs_new_protected_nopar:Npn \__wstf_set_next_hang:
1506 {
1507     \bool_if:NF \g__wstf_move_hang_bool
1508     {
1509         \bool_gset_true:N \g__wstf_move_hang_bool
1510         \dim_gset_eq:NN \g__wstf_hang_ht_dim \g__wstf_remaining_dim
1511     }
1512     \dim_gsub:Nn \g__wstf_hang_ht_dim { \l__wstf_shift_dim }
1513     \dim_gset:Nn \g__wstf_dp_dim { \box_dp:N \l__wstf_window_box }
1514     \__wstf_column_right_move_set:nn
1515     { \g__wstf_hang_ht_dim }
1516     { \g__wstf_column_left_dim }
1517     \int_gzero:N \g__wstf_window_int
1518 }
1519 \dim_new:N \g__wstf_hang_ht_dim
1520 \bool_new:N \g__wstf_move_hang_bool

\__wstf_build_hangfrom: 1521 \cs_new_protected_nopar:Npn \__wstf_build_hangfrom:
1522 {
1523     \dim_compare:nNnTF \g__wstf_prevdepth_dim > \c__wstf_ignore_depth_dim
1524     { \__wstf_build_hangfrom_aux: }
1525     { \dim_gzero:N \g__wstf_ht_dim }
1526 }
1527 \cs_new_protected_nopar:Npn \__wstf_build_hangfrom_aux:
1528 {
1529     \group_begin:
1530     \skip_zero:N \tex_splittopskip:D
1531     \vbox_gset:Nn \g__wstf_line_box
1532     {
1533         \tex_penalty:D \c__wstf_break_int
1534         \vbox_unpack:N \l__wstf_body_box
1535     }
1536     \vbox_set_split_to_ht:NNn \l__wstf_last_box \g__wstf_line_box
1537     { \c_zero_dim }
1538     \dim_gset:Nn \g__wstf_ht_dim
1539     {
1540         \g__wstf_baseline_skip
1541         - \g__wstf_prevdepth_dim
1542         - \l__wstf_shift_dim
1543         - \box_ht:N \l__wstf_body_box
1544         + \box_ht:N \g__wstf_line_box
1545     }
1546     \group_end:
1547     \box_set_eq_drop:NN \l__wstf_body_box \g__wstf_line_box
1548 }

\__wstf_put_box: 1549 \cs_new_protected_nopar:Npn \__wstf_put_box:
1550 {
1551     \para_raw_end:
1552     \dim_compare:nNnTF \g__wstf_prevdepth_dim > \c__wstf_ignore_depth_dim
1553     { \__wstf_add_vskip: }
1554     { \skip_gzero:N \g__wstf_pre_skip }
1555     \skip_set_eq:NN \l__wstf_par_skip \tex_parskip:D
1556     \skip_zero:N \tex_parskip:D
1557     \bool_if:NTF \g__wstf_right_move_bool
1558     { \__wstf_put_box_aux: }
1559     {
1560         \box_if_empty:NTF \l__wstf_bottom_box
1561         {
1562             \dim_compare:nNnTF
1563             { \g__wstf_remaining_dim }
1564             >
1565             { \box_ht_plus_dp:N \l__wstf_window_box }

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```

1566         { \_wstf_set_next: }
1567         { \_wstf_put_box_aux: }
1568     }
1569     { \_wstf_put_box_aux: }
1570 }
1571 }
1572 \skip_new:N \l__wstf_par_skip
1573 \cs_new_protected_nopar:Npn \_wstf_put_box_aux:
1574 {
1575     \int_gzero:N \g__wstf_window_int
1576     \_wstf_hbox:n
1577     {
1578         \_wstf_put_window_box:
1579         \bool_if:NF \g__wstf_next_bool
1580         { \_wstf_put_stuff_box: }
1581     }
1582     \box_if_empty:NTF \l__wstf_bottom_box
1583     { \_wstf_put_trailer_box: }
1584     { \_wstf_put_bottom_box: }
1585 }
1586 \cs_new_protected_nopar:Npn \_wstf_put_trailer_box:
1587 {
1588     \bool_if:NTF \g__wstf_next_hang_bool
1589     {
1590         \_wstf_next_hang_para:
1591         \_wstf_next_para_trailer:
1592     }
1593     {
1594         \bool_if:NTF \g__wstf_right_move_bool
1595         { \_wstf_next_para_trailer: }
1596         {
1597             \_wstf_add_pos_skip:
1598             \box_if_empty:NF \g__wstf_pos_box
1599             {
1600                 \_wstf_newline:
1601                 \hbox_unpack_drop:N \g__wstf_pos_box
1602             }
1603         }
1604     }
1605 }
1606 \cs_new_protected_nopar:Npn \_wstf_put_bottom_box:
1607 {
1608     \_wstf_newline:
1609     \hbox_unpack_drop:N \l__wstf_bottom_box
1610     \box_if_empty:NF \g__wstf_equation_box
1611     { \_wstf_insert_equation: }
1612     \box_if_empty:NF \g__wstf_pos_box
1613     { \hbox_unpack_drop:N \g__wstf_pos_box }
1614     \bool_gset_false:N \g__wstf_right_move_bool
1615     \bool_gset_false:N \g__wstf_first_save_bool
1616 }
1617 \cs_new_protected_nopar:Npn \_wstf_newline:
1618 {
1619     \tex_penalty:D \c__wstf_nobreak_int
1620     \tex_hfil:D
1621     \tex_penalty:D \c__wstf_break_int
1622 }
1623 \cs_new_protected:Npn \_wstf_hbox:n #1
1624 {
1625     \para_raw_noindent:
1626     \hbox_gset:Nn \g__wstf_last_box {#1}
1627     \box_gset_wd:Nn \g__wstf_last_box { \l__wstf_line_dim }
1628     \box_use_drop:N \g__wstf_last_box
1629 }
1630 \cs_new_protected_nopar:Npn \_wstf_put_window_box:
1631 {
1632     \dim_compare:nNnF \l__wstf_l_dim > \c_zero_dim

```

```

1633     { \skip_horizontal:n { \l__wstf_line_dim - \l__wstf_r_dim } }
1634     \box_use:N \l__wstf_window_box
1635   }
1636 \cs_new_protected_nopar:Npn \__wstf_put_stuff_box:
1637 {
1638   \__wstf_move_stuff_box:nn { up }
1639   {
1640     \l__wstf_voffset_dim
1641     + ( \box_dp:N \g__wstf_stuff_box -
1642         \box_dp:N \l__wstf_window_box )
1643     + ( \box_ht_plus_dp:N \l__wstf_window_box -
1644         \g__wstf_stuff_ht_dim ) / 2
1645     \box_if_empty:NT \l__wstf_bottom_box
1646     { - \g__wstf_pos_skip / 2 }
1647   }
1648   \__wstf_output_stuff_box:
1649 }
1650 \cs_new_protected_nopar:Npn \__wstf_output_stuff_box:
1651 {
1652   \skip_horizontal:n
1653   {
1654     \dim_compare:nNnTF \l__wstf_r_dim > \c_zero_dim
1655     {
1656       \dim_compare:nNnTF
1657       { \box_wd:N \l__wstf_window_box }
1658       <
1659       { \l__wstf_window_dim }
1660       { \l__wstf_leftsep_dim }
1661       {
1662         - \l__wstf_r_dim
1663         - \l__wstf_rightsep_dim
1664         - \g__wstf_stuff_wd_dim
1665       }
1666     }
1667     { \l__wstf_leftsep_dim }
1668   }
1669   \box_use_drop:N \g__wstf_stuff_box
1670 }

\__wstf_move_stuff_box:n 1671 \cs_new_protected:Npn \__wstf_move_stuff_box:nn #1#2
1672 {
1673   \hbox_gset:Nn \g__wstf_stuff_box
1674   {
1675     \__wstf_parshape_kern:
1676     \use:c { box_move_ #1 :nn }
1677     {#2}
1678     { \box_use_drop:N \g__wstf_stuff_box }
1679   }
1680   \box_gset_ht:Nn \g__wstf_stuff_box { \c_zero_dim }
1681   \box_gset_dp:Nn \g__wstf_stuff_box { \c_zero_dim }
1682 }

\__wstf_add_vskip: 1683 \cs_new_protected_nopar:Npn \__wstf_add_vskip:
1684 {
1685   \box_if_empty:NTF \g__wstf_display_box
1686   { \__wstf_add_vskip_auxi: }
1687   { \__wstf_add_vskip_display: }
1688 }
1689 \cs_new_protected_nopar:Npn \__wstf_add_vskip_display:
1690 {
1691   \vbox_unpack_drop:N \g__wstf_display_box
1692   \__wstf_ignore_depth:
1693 }
1694 \cs_new_protected_nopar:Npn \__wstf_add_vskip_auxi:
1695 {
1696   \dim_compare:nNnTF \tex_pagegoal:D < \c_max_dim
1697   { \__wstf_add_vskip_auxii: }
1698   { \__wstf_add_vskip_auxiii: }

```

```

1699 }
1700 \cs_new_protected_nopar:Npn \__wstf_add_vskip_auxii:
1701 {
1702   \skip_gset:Nn \g__wstf_pre_skip
1703   {
1704     \g__wstf_baseline_skip
1705     - \g__wstf_prevdepth_dim
1706     - \g__wstf_ht_dim
1707   }
1708   \dim_compare:nNnT \g__wstf_pre_skip < \tex_lineskiplimit:D
1709   { \skip_gset_eq:NN \g__wstf_pre_skip \tex_lineskip:D }
1710   \bool_if:NTF \l__wstf_first_move_bool
1711   { \__wstf_first_move_skip: }
1712   { \skip_vertical:N \g__wstf_pre_skip }
1713   \__wstf_ignore_depth:
1714 }
1715 \cs_new_protected_nopar:Npn \__wstf_add_vskip_auxiii:
1716 {
1717   \dim_compare:nNnTF \tex_topskip:D > \g__wstf_ht_dim
1718   {
1719     \tex_hrule:D height \c_zero_dim \scan_stop:
1720     \skip_gset:Nn \g__wstf_pre_skip
1721     { \tex_topskip:D - \g__wstf_ht_dim }
1722     \skip_vertical:n { \g__wstf_pre_skip - \tex_topskip:D }
1723   }
1724   { \skip_gzero:N \g__wstf_pre_skip }
1725 }
1726 \cs_new_protected_nopar:Npn \__wstf_first_move_skip:
1727 {
1728   \skip_vertical:n
1729   {
1730     \g__wstf_first_sep_dim
1731     - \g__wstf_window_ht_dim
1732     - \tex_parskip:D
1733     \dim_compare:nNnT \g__wstf_column_right_ht_dim > \c_zero_dim
1734     { + \g__wstf_column_right_ht_dim + \g__wstf_pre_skip }
1735   }
1736 }
1737 \skip_new:N \g__wstf_pre_skip

\__wstf_ignore_depth: 1738 \cs_new_protected_nopar:Npn \__wstf_ignore_depth:
\__wstf_set_prevdepth:N 1739 { \dim_set_eq:NN \tex_prevdepth:D \c__wstf_ignore_depth_dim }
1740 \cs_new_protected_nopar:Npn \__wstf_set_prevdepth:N
1741 { \dim_set_eq:NN \tex_prevdepth:D }
1742 \dim_const:Nn \c__wstf_ignore_depth_dim { -1000pt }

\__wstf_set_next: 1743 \cs_new_protected_nopar:Npn \__wstf_set_next:
1744 {
1745   \dim_set:Nn \l__wstf_height_dim
1746   {
1747     \g__wstf_pre_skip
1748     + \g__wstf_pos_skip
1749     + \box_ht_plus_dp:N \l__wstf_window_box
1750   }
1751   \dim_gadd:Nn \g__wstf_total_ht_dim { \l__wstf_height_dim }
1752   \dim_set:Nn \l__wstf_shift_dim
1753   { \g__wstf_remaining_dim - \l__wstf_height_dim }
1754   \dim_compare:nNnTF \l__wstf_shift_dim > \c_zero_dim
1755   { \__wstf_set_next_auxi: }
1756   {
1757     \dim_compare:nNnTF
1758     { - \l__wstf_shift_dim } > \l__wstf_min_dim
1759     { \__wstf_set_next_auxii: }
1760     { \__wstf_set_next_auxi: }
1761   }
1762 }
1763 \dim_new:N \g__wstf_total_ht_dim
1764 \cs_new_protected_nopar:Npn \__wstf_set_next_auxi:

```

```

1765 {
1766   \int_gset:Nn \g__wstf_window_int
1767   {
1768     \dim_compare:nNnTF \l__wstf_shift_dim > \c_zero_dim
1769     { \__wstf_unit:n { \l__wstf_shift_dim } }
1770     { \c_one_int }
1771   }
1772   \__wstf_set_next_verify:
1773   \bool_if:NF \g__wstf_next_bool
1774   { \__wstf_move_next_stuff_box: }
1775   \__wstf_set_next_output:
1776   \__wstf_make_next_stuff:nn
1777   { \g__wstf_stuff_wd_dim }
1778   { \l__wstf_shift_dim }
1779   \int_gzero:N \g__wstf_top_int
1780   \__wstf_next_para_trailer:
1781 }
1782 \cs_new_protected_nopar:Npn \__wstf_move_next_stuff_box:
1783 {
1784   \__wstf_move_stuff_box:nn { down }
1785   {
1786     \box_ht:N \g__wstf_stuff_box
1787     - \box_ht:N \l__wstf_window_box
1788     + ( \g__wstf_window_ht_dim
1789         - \g__wstf_stuff_ht_dim
1790         - \g__wstf_pre_skip
1791         + \g__wstf_pos_skip
1792         + \l__wstf_par_skip ) / 2
1793     - \l__wstf_voffset_dim
1794   }
1795 }
1796 \cs_new_protected_nopar:Npn \__wstf_set_next_auxii:
1797 {
1798   \int_gzero:N \g__wstf_window_int
1799   \bool_if:NF \g__wstf_next_bool
1800   {
1801     \__wstf_move_stuff_box:nn { down }
1802     {
1803       \box_ht:N \g__wstf_stuff_box
1804       - \box_ht:N \l__wstf_window_box
1805       - \l__wstf_voffset_dim
1806     }
1807   }
1808   \__wstf_set_next_output:
1809   \__wstf_add_pos_skip:
1810 }
1811 \cs_new_protected_nopar:Npn \__wstf_set_next_output:
1812 {
1813   \__wstf_hbox:n
1814   {
1815     \__wstf_put_window_box:
1816     \bool_if:NF \g__wstf_next_bool
1817     { \__wstf_output_stuff_box: }
1818   }
1819 }
1820 \cs_new_protected_nopar:Npn \__wstf_set_next_verify:
1821 {
1822   \dim_set:Nn \l__wstf_height_dim
1823   { \g__wstf_window_ht_dim - \g__wstf_total_ht_dim }
1824   \dim_until_do:nNnn
1825   { \tex_baselineskip:D * \g__wstf_window_int + \l__wstf_par_skip }
1826   >
1827   { \l__wstf_height_dim }
1828   { \int_gincr:N \g__wstf_window_int }
1829   \dim_gadd:Nn \g__wstf_total_ht_dim
1830   { \tex_baselineskip:D * \g__wstf_window_int + \l__wstf_par_skip }
1831 }

```

```

\__wstf_next_para_trailer: 1832 \cs_new_protected_nopar:Npn \__wstf_next_para_trailer:
1833 {
1834   \__wstf_add_pos_skip:
1835   \box_if_empty:NTF \g__wstf_pos_box
1836     { \__wstf_next_para: }
1837     {
1838       \__wstf_env_begin:
1839       \hbox_unpack_drop:N \g__wstf_pos_box
1840       \__wstf_env_end:
1841     }
1842 }

\__wstf_make_next_stuff:nn 1843 \cs_new_protected:Npn \__wstf_make_next_stuff:nn #1#2
1844 {
1845   \bool_gset_true:N \g__wstf_next_bool
1846   \dim_gset:Nn \g__wstf_stuff_wd_dim {#1}
1847   \dim_gset:Nn \g__wstf_remaining_dim {#2}
1848 }
1849 \bool_new:N \g__wstf_next_bool

\__wstf_extract_hbox:NN 1850 \cs_new_protected:Npn \__wstf_extract_display_hbox:NN #1
1851 {
1852   \box_gclear:N \g__wstf_pos_box
1853   \vbox_set:Nn #1
1854   {
1855     \vbox_unpack_drop:N #1
1856     \bool_if:NTF \g__wstf_display_bool
1857       { \__wstf_test_display_math: }
1858       { \box_gclear:N \g__wstf_display_box }
1859     \box_if_empty:NTF \g__wstf_display_box
1860       {
1861         \bool_gset_false:N \g__wstf_amsmath_bool
1862         \__wstf_extract_last_hbox:N \g__wstf_last_box
1863       }
1864       { \box_gclear:N \g__wstf_last_box }
1865   }
1866   \box_if_empty:NF \g__wstf_display_box
1867   { \dim_gset:Nn \g__wstf_display_pre_dim { \box_dp:N #1 } }
1868   \__wstf_extract_hbox_aux:N
1869 }

1870 \cs_new_protected:Npn \__wstf_extract_hbox:NN #1
1871 {
1872   \vbox_set:Nn #1
1873   {
1874     \vbox_unpack_drop:N #1
1875     \__wstf_extract_last_hbox:N \g__wstf_last_box
1876   }
1877   \__wstf_extract_hbox_aux:N
1878 }

1879 \cs_new_protected:Npn \__wstf_extract_hbox_aux:N #1
1880 {
1881   \box_if_empty:NTF \g__wstf_last_box
1882     { \box_clear:N #1 }
1883     { \__wstf_repack_hbox:N #1 }
1884 }

1885 \cs_new_protected:Npn \__wstf_repack_hbox:N #1
1886 {
1887   \hbox_set:Nn #1
1888   {
1889     \skip_if_eq:nnF
1890       { \g__wstf_main_left_skip } { \c_zero_skip }
1891       { \skip_horizontal:N \g__wstf_main_left_skip }
1892     \hbox_unpack_drop:N \g__wstf_last_box
1893     \tex_unskip:D \tex_unskip:D \tex_unpenalty:D
1894   }
1895 }

1896 \cs_new_protected:Npn \__wstf_extract_last_hbox:N #1
1897 {

```

```

1898 \_wstf_if_last_hlist:TF
1899 {
1900     \box_gset_to_last:N #1
1901     \tex_unskip:D
1902 }
1903 { \box_gclear:N #1 }
1904 }
1905 \box_new:N \g__wstf_last_box
1906 \box_new:N \g__wstf_display_box
1907 \dim_new:N \g__wstf_display_pre_dim
\_wstf_test_display_math: 1908 \cs_new_protected_nopar:Npn \_wstf_test_display_math:
1909 {
1910     \_wstf_if_last_hlist:T
1911     {
1912         \box_gset_to_last:N \g__wstf_pos_box
1913         \tex_unskip:D
1914     }
1915     \box_clear:N \l__wstf_add_box
1916     \box_gclear:N \g__wstf_display_box
1917     \skip_gzero:N \g__wstf_last_skip
1918     \skip_gzero:N \g__wstf_display_pre_skip
1919     \bool_gset_false:N \g__wstf_amsmath_bool
1920     \_wstf_add_last_skip:w
1921     \_wstf_add_last_penalty:w
1922     \_wstf_add_last_box:w
1923     \_wstf_add_last_skip:w
1924     \_wstf_add_last_skip:w
1925     \_wstf_add_last_penalty:w
1926     \_wstf_add_last_finalise:w \q_stop
1927 }
1928 \box_new:N \l__wstf_add_box
1929 \box_new:N \g__wstf_pos_box
\_wstf_add_last_stop:w 1930 \cs_new_protected_nopar:Npn \_wstf_add_last_stop:w
1931 {
1932     \vbox_unpack_drop:N \l__wstf_add_box
1933     \use_none_delimit_by_q_stop:w
1934 }
\_wstf_add_last_skip:w 1935 \cs_new_protected_nopar:Npn \_wstf_add_last_skip:w
1936 {
1937     \_wstf_if_last_glue:TF
1938     {
1939         \skip_set_eq:NN \l__wstf_last_skip \tex_lastskip:D
1940         \vbox_set:Nn \l__wstf_add_box
1941         {
1942             \skip_vertical:N \l__wstf_last_skip
1943             \vbox_unpack_drop:N \l__wstf_add_box
1944         }
1945         \tex_unskip:D
1946         \skip_gadd:Nn \g__wstf_last_skip { \l__wstf_last_skip }
1947     }
1948     { \_wstf_skip_stop:w }
1949 }
1950 \skip_new:N \l__wstf_last_skip
1951 \skip_new:N \g__wstf_last_skip
1952 \cs_new_eq:NN \_wstf_skip_stop:w \_wstf_add_last_stop:w
\_wstf_add_last_penalty:w 1953 \cs_new_protected_nopar:Npn \_wstf_add_last_penalty:w
1954 {
1955     \_wstf_if_last_penalty:TF
1956     {
1957         \int_set_eq:NN \l__wstf_last_int \tex_lastpenalty:D
1958         \vbox_set:Nn \l__wstf_add_box
1959         {
1960             \tex_penalty:D \l__wstf_last_int
1961             \vbox_unpack_drop:N \l__wstf_add_box

```

```

1962     }
1963     \tex_unpenalty:D
1964     \skip_gset_eq:NN \g__wstf_pre_skip \g__wstf_last_skip
1965     \skip_gzero:N \g__wstf_last_skip
1966   }
1967   { \__wstf_penalty_stop:w }
1968 }
1969 \int_new:N \l__wstf_last_int
1970 \cs_new_eq:NN \__wstf_penalty_stop:w \__wstf_add_last_stop:w

\__wstf_add_last_box:w 1971 \cs_new_protected_nopar:Npn \__wstf_add_last_box:w
1972 {
1973   \__wstf_if_last_hlist:TF
1974   {
1975     \skip_gzero:N \g__wstf_last_skip
1976     \box_set_to_last:N \l__wstf_last_box
1977     \vbox_set:Nn \l__wstf_add_box
1978     {
1979       \box_use_drop:N \l__wstf_last_box
1980       \vbox_unpack_drop:N \l__wstf_add_box
1981     }
1982   }
1983   { \__wstf_box_stop:w }
1984 }
1985 \box_new:N \l__wstf_last_box
1986 \cs_new_eq:NN \__wstf_box_stop:w \__wstf_add_last_stop:w

\__wstf_add_last_finalise:w 1987 \cs_new_protected_nopar:Npn \__wstf_add_last_finalise:w
1988 {
1989   \int_gset_eq:NN \g__wstf_display_pre_int \l__wstf_last_int
1990   \skip_gadd:Nn \g__wstf_display_pre_skip { \g__wstf_pre_skip }
1991   \int_case:nnTF { \tex_lastnodetype:D }
1992   {
1993     { \c__wstf_hlist_node } { }
1994     { \c__wstf_none_node } { }
1995     { \c__wstf_whatsit_node } { }
1996   }
1997   { \box_gset_eq_drop:NN \g__wstf_display_box \l__wstf_add_box }
1998   { \vbox_unpack_drop:N \l__wstf_add_box }
1999   \use_none_delimit_by_q_stop:w
2000 }
2001 \int_new:N \g__wstf_display_pre_int
2002 \skip_new:N \g__wstf_display_pre_skip

\__wstf_amsmath_boot:w 2003 \cs_new_protected_nopar:Npn \__wstf_amsmath_boot:w
\__wstf_amsmath_recursion:w 2004 {
\__wstf_amsmath_multline:w 2005   \__wstf_add_last_skip:w
2006   \__wstf_add_last_penalty:w
2007   \cs_set_eq:NN \__wstf_box_stop:w \__wstf_add_last_stop:w
2008   \__wstf_add_last_box:w
2009   \bool_gset_true:N \g__wstf_amsmath_bool
2010   \cs_set_eq:NN \__wstf_skip_stop:w \__wstf_amsmath_multline:w
2011   \cs_set_eq:NN \__wstf_penalty_stop:w \__wstf_amsmath_stop:NN
2012   \__wstf_amsmath_recursion:w
2013 }
2014 \cs_new_protected_nopar:Npn \__wstf_amsmath_recursion:w
2015 {
2016   \__wstf_add_last_skip:w
2017   \__wstf_add_last_penalty:w
2018   \__wstf_add_last_box:w
2019   \__wstf_amsmath_recursion:w
2020 }
2021 }
2022 \cs_new_protected:Npn \__wstf_amsmath_stop:NN #1#2
2023 {
2024   \cs_set_eq:NN \__wstf_skip_stop:w \__wstf_add_last_stop: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。

```

2025 \cs_set_eq:NN \__wstf_penalty_stop:w \__wstf_add_last_stop:w
2026 }
2027 \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。

```

2028 \cs_new_protected_nopar:Npn \__wstf_amsmath_multline:w
2029 {
2030   \__wstf_amsmath_stop:NN ? ?
2031   \__wstf_add_last_penalty:w
2032   \skip_gset_eq:NN \g__wstf_display_pre_skip
2033   \g__wstf_pre_skip
2034   \__wstf_add_last_skip:w
2035   \__wstf_add_last_penalty:w
2036   \__wstf_add_last_finalise:w
2037 }

```

`\__wstf_amsmath_leqno:` `amsmath` 的 `leqno` 是直接 `\tex_leqno:D` 实现的, 与 `LATEX` 的实现不一样。

```

2038 \cs_new_protected_nopar:Npn \__wstf_amsmath_leqno:
2039 {
2040   \legacy_if:nTF { tagsleft@ }
2041   { \bool_gset_true:N \g__wstf_leqno_bool }
2042   { \bool_gset_false:N \g__wstf_leqno_bool }
2043 }

2044 \__wstf_package_hook:nn { amsmath }
2045 {
2046   \cs_gset_eq:NN \__wstf_box_stop:w
2047   \__wstf_amsmath_boot:w
2048   \cs_gset_eq:NN \__wstf_test_leqno:
2049   \__wstf_amsmath_leqno:
2050 }

```

```

\__wstf_set_float: 2051 \cs_new_protected_nopar:Npn \__wstf_set_float:
2052 {
2053   \cs_set_eq:NN \@capttype \l__wstf_type_tl
2054   \__wstf_float_pre_hook:
2055   \__wstf_caption_hook:
2056   \@floatboxreset
2057 }

```

```

\__wstf_float_pre_hook: 2058 \cs_new_eq:NN \__wstf_float_pre_hook: \__wstf_empty:
\__wstf_float_pos_hook: 2059 \cs_new_eq:NN \__wstf_float_pos_hook: \__wstf_empty:
2060 \__wstf_package_hook:nn { float }
2061 {
2062   \bool_new:N \g__wstf_float_pos_bool
2063   \cs_gset_protected_nopar:Npn \__wstf_float_pre_hook:
2064   { \exp_args:No \__wstf_float_pre_aux:n { \l__wstf_type_tl } }

```

```

2065 \cs_new_protected:Npn \__wstf_float_pre_aux:n #1
2066 {
2067   \cs_if_exist_use:cTF { fst@ #1 }
2068   {
2069     \@float@setevery {#1}
2070     \bool_gset_true:N \g__wstf_float_pos_bool
2071   }
2072   { \bool_gset_false:N \g__wstf_float_pos_bool }
2073 }
2074 \cs_gset_protected_nopar:Npn \__wstf_float_pos_hook:
2075 {
2076   \bool_if:NT \g__wstf_float_pos_bool
2077   { \exp_args:No \__wstf_float_pos_aux:n { \l__wstf_type_tl } }
2078 }
2079 \cs_new_protected:Npn \__wstf_float_pos_aux:n #1
2080 {
2081   \hbox_gset:Nn \g__wstf_stuff_box
2082   {
2083     \use:c { fst@ #1 }
2084     \cs_set_eq:NN \@currbox \g__wstf_stuff_box
2085     \vbox_gset:Nn \g__wstf_stuff_box
2086     { \box_use_drop:N \g__wstf_stuff_box }
2087     \exp_args:Ne \float@makebox
2088     { \dim_eval:n { \box_wd:N \g__wstf_stuff_box } }
2089   }
2090 }
2091 }

\__wstf_floatrow_hook: 2092 \cs_new_eq:NN \__wstf_floatrow_hook: \__wstf_empty:
2093 \__wstf_package_hook:nn { floatrow }
2094 {
2095   \cs_gset_protected_nopar:Npn \__wstf_floatrow_hook:
2096   {
2097     \cs_set_eq:NN \@capttype \l__wstf_type_tl
2098     \killfloatstyle
2099     \FR@redefs
2100     \dim_zero:N \FBc@wd
2101     \exp_args:Ne \flrow@setlist
2102     {
2103       { \l__wstf_type_tl }
2104       { wrapfloat }
2105       { wrap \l__wstf_type_tl }
2106     }
2107     \FRifFBOX \@@setframe \relax \@@FStrue
2108     \hbox_gset:Nw \g__wstf_stuff_box
2109     \tl_set:Nx \FBB@wd { \dim_use:N \l__wstf_width_dim }
2110     \FB@fs@wd
2111     \dim_set:Nn \l__wstf_width_dim { \FBo@wd }
2112   }
2113   \cs_gset_protected_nopar:Npn \__wstf_float_pre_hook:
2114   { \the \FR@everyfloat }
2115   \cs_gset_protected_nopar:Npn \__wstf_float_pos_hook:
2116   {
2117     \legacy_if:nTF { FBbuild }
2118     {
2119       \cs_set_eq:NN \@currbox \g__wstf_stuff_box
2120       \vbox_gset:Nn \g__wstf_stuff_box
2121       { \box_use_drop:N \g__wstf_stuff_box }
2122       \flrow@FB { \l__wstf_width_dim }
2123     }
2124     {
2125       \cs_undefine:N \flrow@typ@tmpset
2126       \box_use_drop:N \g__wstf_stuff_box
2127     }
2128     \hbox_gset_end:
2129   }
2130 }

```

```

__wstf_caption_hook: 2131 \cs_new_eq:NN \__wstf_caption_hook: \__wstf_empty:
2132 \__wstf_package_hook:nn { caption }
2133 {
2134   \cs_gset_protected_nopar:Npn \__wstf_caption_hook:
2135     { \exp_args:No \__wstf_caption_aux:n { \l__wstf_type_tl } }
2136   \cs_new_protected:Npn \__wstf_caption_aux:n #1
2137     {
2138       \caption@settype {#1}
2139       \caption@clearmargin
2140       \caption@setoptions { wrap #1 }
2141     }
2142 }

top 2143 \keys_define:nn { wrapstuff }
2144 {
2145   abovesep .tl_set:N = \l__wstf_abovesep_tl ,
2146   belowsep .tl_set:N = \l__wstf_belowsep_tl ,
2147   leftsep .tl_set:N = \l__wstf_leftsep_tl ,
2148   rightsep .tl_set:N = \l__wstf_rightsep_tl ,
2149   linewidth .tl_set:N = \l__wstf_linewidth_tl ,
2150   lines .tl_set:N = \l__wstf_lines_tl ,
2151   width .tl_set:N = \l__wstf_width_tl ,
2152   height .tl_set:N = \l__wstf_height_tl ,
2153   hoffset .tl_set:N = \l__wstf_hoffset_tl ,
2154   voffset .tl_set:N = \l__wstf_voffset_tl ,
2155   type .tl_set:N = \l__wstf_type_tl ,
2156   ratio .fp_set:N = \l__wstf_ratio_fp ,
2157   top .int_set:N = \l__wstf_top_int ,
2158   i .code:n = \__wstf_swap_true:N \c_true_bool ,
2159   o .code:n = \__wstf_swap_true:N \c_false_bool ,
2160   l .code:n = \__wstf_swap_false:N \c_zero_fp ,
2161   r .code:n = \__wstf_swap_false:N \c_one_fp ,
2162   c .code:n = \__wstf_swap_false:N \c__wstf_c_fp ,
2163   column .choice: ,
2164   column/true .code:n =
2165     {
2166       \bool_set_true:N \l__wstf_column_bool
2167       \cs_set_eq:NN \__wstf_build_column:
2168         \__wstf_build_column_strict:
2169     } ,
2170   column/par .code:n =
2171     {
2172       \bool_set_true:N \l__wstf_column_bool
2173       \cs_set_eq:NN \__wstf_build_column:
2174         \__wstf_build_column_fuzzy:
2175     } ,
2176   column/false .code:n =
2177     { \bool_set_false:N \l__wstf_column_bool } ,
2178   hsep .code:n =
2179     {
2180       \tl_set:Nn \l__wstf_leftsep_tl {#1}
2181       \tl_set_eq:NN \l__wstf_rightsep_tl
2182         \l__wstf_leftsep_tl
2183     } ,
2184   vsep .code:n =
2185     {
2186       \tl_set:Nn \l__wstf_abovesep_tl {#1}
2187       \tl_set_eq:NN \l__wstf_belowsep_tl
2188         \l__wstf_abovesep_tl
2189     } ,
2190   unknown .code:n =
2191     { \exp_args:No \__wstf_unknown_key:n { \l_keys_key_str } } ,
2192   leftsep .groups:n = main ,
2193   rightsep .groups:n = main ,
2194   hsep .groups:n = main ,
2195   linewidth .groups:n = main ,
2196   lines .groups:n = main ,
2197   column .groups:n = main ,

```

```

2198 hoffset .groups:n = main ,
2199 voffset .groups:n = main ,
2200 top .groups:n = stuff ,
2201 abovesep .groups:n = stuff ,
2202 belowsep .groups:n = stuff ,
2203 vsep .groups:n = stuff ,
2204 width .groups:n = stuff ,
2205 height .groups:n = stuff ,
2206 float .groups:n = stuff ,
2207 ratio .groups:n = ratio ,
2208 l .groups:n = ratio ,
2209 r .groups:n = ratio ,
2210 c .groups:n = ratio ,
2211 i .groups:n = ratio ,
2212 o .groups:n = ratio ,
2213 column .default:n = true ,
2214 column .initial:n = true ,
2215 abovesep .initial:n = \c_zero_dim ,
2216 belowsep .initial:n = \c_zero_dim ,
2217 leftsep .initial:n = 1em ,
2218 rightsep .initial:n = 1em ,
2219 linewidth .initial:n = \linewidth ,
2220 hoffset .initial:n = \c_zero_dim ,
2221 voffset .initial:n = \c_zero_dim ,
2222 width .initial:n = \c_zero_dim ,
2223 height .initial:n = \c_zero_dim ,
2224 ratio .initial:n = \c_one_fp ,
2225 abovesep .value_required:n = true ,
2226 belowsep .value_required:n = true ,
2227 leftsep .value_required:n = true ,
2228 rightsep .value_required:n = true ,
2229 linewidth .value_required:n = true ,
2230 width .value_required:n = true ,
2231 height .value_required:n = true ,
2232 hoffset .value_required:n = true ,
2233 voffset .value_required:n = true ,
2234 hsep .value_required:n = true ,
2235 vsep .value_required:n = true ,
2236 l .value_forbidden:n = true ,
2237 r .value_forbidden:n = true ,
2238 c .value_forbidden:n = true ,
2239 i .value_forbidden:n = true ,
2240 o .value_forbidden:n = true
2241 }
2242 \fp_const:Nn \c__wstf_c_fp { 0.5 }
2243 \cs_new_protected:Npn \__wstf_swap_true:N #1
2244 {
2245   \bool_set_true:N \l__wstf_swap_bool
2246   \bool_set_eq:NN \l__wstf_inner_bool #1
2247   \bool_if:NTF \l__wstf_inner_bool
2248     { \bool_set_false:N \l__wstf_outer_bool }
2249     { \bool_set_true:N \l__wstf_outer_bool }
2250 }
2251 \cs_new_protected_nopar:Npn \__wstf_swap_false:N
2252 {
2253   \bool_set_false:N \l__wstf_swap_bool
2254   \fp_set_eq:NN \l__wstf_ratio_fp
2255 }
2256 \cs_new_protected:Npn \__wstf_unknown_key:n #1
2257 {
2258   \regex_match:NnTF \c__wstf_integer_regex {#1}
2259     { \int_set:Nn \l__wstf_top_int }
2260     { \__wstf_unknown_key_error:n }
2261     {#1}
2262 }
2263 \regex_const:Nn \c__wstf_integer_regex { \A \d+ \Z }
2264 \cs_new_protected_nopar:Npn \__wstf_unknown_key_error:n

```

```

2265 { \msg_error:nnn { wrapstuff } { unknown-key } }
2266 \msg_new:nnnn { wrapstuff } { unknown-key }
2267 { The~key~'#1'~is~unknown~and~is~being~ignored. }
2268 {
2269   The~package~wrapstuff~does~not~have~a~key~called~'#1'.\\
2270   Check~that~you~have~spelled~the~key~name~correctly.
2271 }

```

```

\wrapstuffset 2272 \NewDocumentCommand \wrapstuffset { m }
2273 { \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。

```

2274 \NewDocumentCommand \wrapstuffclear { }
2275 {
2276   \par
2277   \__wstf_clear:
2278 }

2279 \cs_if_exist:NTF \ProcessKeyOptions
2280 { \ProcessKeyOptions [ wrapstuff ] }
2281 {
2282   \RequirePackage { l3keys2e }
2283   \ProcessKeysOptions { wrapstuff }
2284 }

2285 </package>

```

## 版本历史

<b>v0.1</b>	(2022/07/05 – 2022/07/20)	首次提交到 CTAN 发布。 . . . . .	<b>1</b>
General: 初始版本。 . . . . .			<b>1</b>

## 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, 2269
A	
\\A . . . . .	2263
abovesep . . . . .	2
B	
\\begin . . . . .	97, 98, 318
belowsep . . . . .	2
bool commands:	
\\bool_gset_false:N . . . . .	276, 277, 278, 279, 280, 281, 520, 663, 911, 1290, 1306, 1320, 1399, 1403, 1485, 1501, 1503, 1614, 1615, 1861, 1919, 2042, 2072
\\bool_gset_true:N . . . . .	456, 573, 670, 920, 1266, 1269, 1283, 1284, 1300, 1301, 1356, 1357, 1509, 1845, 2009, 2041, 2070
\\bool_if:NTF . . . . .	204, 251, 252, 285, 358, 368, 424, 434, 450, 478, 487, 565, 679, 738, 787, 838, 848, 886, 896, 904, 926, 967, 972, 1020, 1027, 1034, 1053, 1055, 1080, 1104, 1185, 1252, 1263, 1267, 1304, 1322, 1391, 1465, 1472, 1500, 1507, 1557, 1579, 1588, 1594, 1710, 1773, 1799, 1816, 1856, 2076, 2247
\\bool_lazy_and:nnTF . . . . .	1092
\\bool_lazy_or:nnTF . . . . .	960
\\bool_new:N . . . . .	256, 257, 258, 420, 475, 586, 676, 954, 955, 956, 957, 1452, 1453, 1454, 1455, 1456, 1457, 1458, 1459, 1460, 1520, 1849, 2027, 2062
\\bool_set_eq:NN . . . . .	2246
\\bool_set_false:N . . . . .	443, 992, 1309, 2177, 2248, 2253
\\bool_set_true:N . . . . .	423, 433, 737, 837, 1307, 2166, 2172, 2245, 2249
\\c_false_bool . . . . .	2159
\\c_true_bool . . . . .	2158
box commands:	
\\box_clear:N . . . . .	822, 990, 993, 1882, 1915
\\box_dp:N . . . . .	125, 145, 300, 339, 723, 815, 817, 860, 1144, 1289, 1334, 1513, 1641, 1642, 1867
\\box_gc_clear:N . . . . .	287, 841, 894, 1852, 1858, 1864, 1903, 1916
\\box_gset_dp:Nn . . . . .	131, 148, 1334, 1681
\\box_gset_eq_drop:NN . . . . .	936, 937, 1265, 1997
\\box_gset_ht:Nn . . . . .	130, 260, 262, 1333, 1412, 1680
\\box_gset_to_last:N . . . . .	777, 914, 918, 1900, 1912
\\box_gset_wd:Nn . . . . .	759, 929, 1627
\\box_ht:N . . . . .	124, 260, 262, 504, 799, 801, 814, 816, 1148, 1157, 1158, 1181, 1195, 1333, 1344, 1351, 1352, 1369, 1382, 1383, 1413, 1424, 1430, 1470, 1492, 1543, 1544, 1786, 1787, 1803, 1804
\\box_ht_plus_dp:N . . . . .	86, 1083, 1211, 1212, 1327, 1565, 1643, 1749
\\box_if_empty:NTF . . . . .	292, 682, 691, 693, 741, 991, 1179, 1217, 1246, 1249, 1499, 1560, 1582, 1598, 1610, 1612, 1645, 1685, 1835, 1859, 1866, 1881
\\box_if_empty_p:N . . . . .	1093
\\box_if_horizontal:NTF . . . . .	805
\\box_move_down:nn . . . . .	1147
\\box_move_up:nn . . . . .	121, 144, 1194, 1364, 1378, 1423
\\box_new:N . . . . .	152, 400, 401, 698, 948, 949, 950, 951, 996, 1163, 1164, 1165, 1166, 1444, 1445, 1446, 1905, 1906, 1928, 1929, 1985
\\box_set_dp:Nn . . . . .	1084
\\box_set_eq:NN . . . . .	807, 986, 1095, 1142, 1232
\\box_set_eq_drop:NN . . . . .	717, 788, 839, 935, 1205, 1219, 1220, 1230, 1231, 1258, 1482, 1547
\\box_set_ht:Nn . . . . .	1082
\\box_set_to_last:N . . . . .	1097, 1100, 1126, 1128, 1187, 1439, 1477, 1976
\\box_use:N . . . . .	856, 1106, 1108, 1132, 1134, 1192, 1362, 1366, 1376, 1385, 1408, 1410, 1421, 1634
\\box_use_drop:N . . . . .	128, 146, 166, 302, 468, 795, 861, 884, 888, 895, 899, 945, 1149, 1196, 1425, 1628, 1669, 1678, 1979, 2086, 2121, 2126
\\box_wd:N . . . . .	84, 712, 930, 942, 943, 1657, 2088
C	
c . . . . .	2
column . . . . .	2
cs commands:	
\\cs_gset_eq:NN . . . . .	195, 311, 312, 313, 323, 324, 325, 373, 374, 395, 598, 600, 602, 603, 2046, 2048
\\cs_gset_protected_nopar:Npn . . . . .	2063, 2074, 2095, 2113, 2115, 2134
\\cs_if_exist:NTF . . . . .	2279
\\cs_if_exist_use:NTF . . . . .	247, 2067
\\cs_new:Npn . . . . .	178, 612, 614
\\cs_new_eq:NN . . . . .	180, 329, 330, 331, 605, 606, 675, 1461, 1462, 1952, 1970, 1986, 2058, 2059, 2092, 2131

\cs_new_protected:Npn	50, 52, 210, 215, 259, 261, 454, 640, 852, 864, 1298, 1623, 1671, 1843, 1850, 1870, 1879, 1885, 1896, 2022, 2065, 2079, 2136, 2243, 2256
\cs_new_protected_nopar:Npn	93, 102, 108, 110, 117, 133, 140, 160, 169, 181, 198, 220, 229, 240, 263, 269, 283, 296, 309, 315, 317, 319, 321, 327, 421, 431, 441, 476, 496, 508, 518, 528, 546, 555, 563, 569, 576, 581, 592, 626, 634, 642, 661, 677, 686, 699, 709, 721, 727, 735, 745, 768, 785, 803, 835, 846, 880, 892, 901, 907, 924, 933, 958, 984, 997, 1016, 1051, 1059, 1069, 1087, 1113, 1124, 1140, 1152, 1170, 1199, 1207, 1225, 1239, 1260, 1281, 1286, 1318, 1336, 1371, 1389, 1401, 1415, 1428, 1434, 1463, 1487, 1505, 1521, 1527, 1549, 1573, 1586, 1606, 1617, 1630, 1636, 1650, 1683, 1689, 1694, 1700, 1715, 1726, 1738, 1740, 1743, 1764, 1782, 1796, 1811, 1820, 1832, 1908, 1930, 1935, 1953, 1971, 1987, 2003, 2014, 2028, 2038, 2051, 2251, 2264
\cs_set:Npn	26, 33
\cs_set_eq:NN	429, 439, 451, 452, 460, 2007, 2010, 2011, 2024, 2025, 2053, 2084, 2097, 2119, 2167, 2173
\cs_undefine:N	2125
<b>D</b>	
\d	2263
dim commands:	
\dim_add:Nn	470, 800
\dim_compare:nNnTF	69, 74, 96, 114, 137, 510, 557, 559, 668, 712, 883, 1209, 1330, 1483, 1497, 1523, 1552, 1562, 1632, 1654, 1656, 1696, 1708, 1717, 1733, 1754, 1757, 1768
\dim_const:Nn	1742
\dim_eval:n	260, 262, 641, 814, 815, 816, 817, 2088
\dim_gadd:Nn	1751, 1829
\dim_gset:Nn	83, 85, 461, 499, 503, 533, 535, 723, 799, 1144, 1154, 1181, 1270, 1315, 1324, 1340, 1349, 1354, 1368, 1430, 1470, 1513, 1538, 1846, 1847, 1867
\dim_gset_eq:NN	87, 316, 505, 541, 543, 579, 1272, 1292, 1510
\dim_gsub:Nn	1288, 1496, 1512
\dim_gzero:N	273, 274, 540, 1291, 1525
\dim_max:nn	1156, 1491
\dim_new:N	153, 154, 155, 156, 157, 158, 159, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 473, 474, 589, 590, 591, 1161, 1162, 1447, 1448, 1449, 1450, 1451, 1519, 1763, 1907
\dim_set:Nn	66, 67, 136, 335, 336, 337, 338, 339, 343, 446, 448, 457, 1489, 1745, 1752, 1822, 2111
\dim_set_eq:NN	340, 360, 364, 428, 438, 574, 584, 671, 869, 1005, 1006, 1075, 1176, 1243, 1739, 1741
\dim_sub:Nn	341, 426, 436, 444
\dim_to_decimal_in_unit:nn	620
\dim_to_fp:n	613
\dim_until_do:nNnn	1824
\dim_use:N	830, 831, 832, 833, 2109
\dim_zero:N	427, 437, 1004, 2100
\c_max_dim	526, 668, 712, 1005, 1006, 1049, 1176, 1243, 1696
\c_zero_dim	69, 74, 96, 114, 131, 137, 148, 463, 510, 526, 557, 559, 830, 831, 832, 833, 1024, 1031, 1038, 1044, 1045, 1049, 1202, 1330, 1483, 1497, 1537, 1632, 1654, 1680, 1681, 1719, 1733, 1754, 1768, 2215, 2216, 2220, 2221, 2222, 2223
<b>E</b>	
else commands:	
\else:	40
\end	104, 320
exp commands:	
\exp_after:wN	664
\exp_args:Ncc	29
\exp_args:Ne	247, 2087, 2101
\exp_args:Nnno	200
\exp_args:Nno	222
\exp_args:No	2064, 2077, 2135, 2191
\exp_not:N	175, 213, 218
\ExplLoaderFileDate	13
<b>F</b>	
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\fi:	40
\fmtversion	3
fp commands:	
\fp_compare:nNnTF	345, 347
\fp_compare:nTF	242
\fp_const:Nn	2242
\fp_eval:n	218, 616
\fp_set:Nn	213, 218
\fp_set_eq:NN	2254
\fp_to_dim:n	613
\fp_use:N	213
\fp_zero:N	244, 1310
\c_one_fp	243, 254, 347, 2161, 2224
\c_zero_fp	243, 345, 2160
\FRiffBOX	2107
<b>G</b>	
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