

Package `innerscript` v. 1.2 Implementation

Conrad Kosowsky

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`kosowsky.latex@gmail.com`

For easy, off-the-shelf use, type the following in your document preamble and compile using Lua \LaTeX :

```
\usepackage{innerscript}
```

Overview

The `innerscript` package optionally modifies four aspects of \TeX 's automatic math formatting to improve typesetting: (1) it adds extra space around relation and operation symbols in superscripts and subscripts; (2) it removes extra space around `\left-\right` delimiter pairs; (3) it adds extra space after right delimiters in certain situations; and (4) it forces `\left` and `\right` delimiters to completely cover their contents. Using Lua \LaTeX is required.

This file documents the code for the `innerscript` package. It is not a user guide! If you are looking for instructions on how to load `innerscript` and what it can do for your document, see `innerscript_user_guide.pdf`, which is included with the `innerscript` installation and is available on CTAN. Section 1 begins with the package declaration and option processing. Sections 2 and 3 contain the code to adjust spacing between symbols in `\scriptstyle` and `\scriptscriptstyle` respectively, and Section 4 contains the code for adjusting the spacing around `\mathinner` subformulas. Section 5 handles spacing between `\mathclose` and `\mathord` atoms, and section 6 fills out the resizable delimiter heights. Version history appears at the end of the document.

1 Setup

We begin the implementation by declaring the package. The counts `\IS@script` and `\IS@scriptscript` and the conditionals `\ifIS@inner`, `\ifIS@close`, and `\ifIS@cover` encode package option information. For the counts, a value of 0 means no changes, a value of 1 means default spacing, and a value of 2 means legacy spacing.

```
1 \NeedsTeXFormat{LaTeX2e}
2 \ProvidesPackage{innerscript}[2023/11/06 v. 1.2 Package innerscript]
3 \newcount\IS@script
4 \newcount\IS@scriptscript
5 \newif\ifIS@inner
6 \newif\ifIS@close
7 \newif\ifIS@cover
```

And set default options.

```

8 \IS@script\@ne
9 \IS@scriptscript\@ne
10 \IS@innertrue
11 \IS@closetrue
12 \IS@covertrue

```

Now define and process the package options.

```

13 \DeclareOption{script}{\IS@script\@ne}
14 \DeclareOption{scriptscript}{\IS@scriptscript\@ne}
15 \DeclareOption{inner}{\IS@innertrue}
16 \DeclareOption{close}{\IS@closetrue}
17 \DeclareOption{cover}{\IS@covertrue}
18 \DeclareOption{legacy-script}{\IS@script\tw@}
19 \DeclareOption{legacy-scriptscript}{\IS@scriptscript\tw@}
20 \DeclareOption{no-script}{\IS@script\z@}
21 \DeclareOption{no-scriptscript}{\IS@scriptscript\z@}
22 \DeclareOption{no-inner}{\IS@innerfalse}
23 \DeclareOption{no-close}{\IS@closefalse}
24 \DeclareOption{no-cover}{\IS@coverfalse}
25 \ProcessOptions*

```

Check whether `\Umathordordspacing` is defined. If not, issue an error and `\endinput`. We normally can't print multiple spaces at once, so within a group, we change the space catcode to 12.

```

26 \ifx\Umathordordspacing\@undefined
27 \bgroup
28 \catcode`\+=12\relax
29 \def\IS@LuaTeXError{\GenericError{}}%
30 {\MessageBreak\MessageBreak
31 Package innerscript error:%
32 \MessageBreak\MessageBreak
33 *****\MessageBreak
34 *          *\MessageBreak
35 *  CANNOT LOAD *\MessageBreak
36 *  INNERSCRIPT *\MessageBreak
37 *  LuaTeX Needed *\MessageBreak
38 *          *\MessageBreak
39 *****\MessageBreak\@gobbletwo}%
40 {See the innerscript package documentation for explanation.}%
41 {I need LuaTeX to make the innerscript package work. It\MessageBreak
42 looks like the current engine is something else, so I\MessageBreak
43 can't load the package file. To use innerscript, please\MessageBreak
44 typeset with LuaLaTeX. To continue without innerscript,\MessageBreak
45 press return.}}%
46 \expandafter\egroup
47 \IS@LuaTeXError
48 \AtEndOfPackage{\typeout{Package innerscript failed to load \on@line!}}

```

```
49 \expandafter\endinput % we \endinput with a balanced conditional
50 \fi
```

To save space in the code, we define `\IS@info` to print an informational message in the log file. The macro `\scalemu` scales a muglue register. We use `\scalemu` instead of multiplying the register by a constant because `\scalemu` also affects the stretch and shrink instead of discarding them.

```
51 \def\IS@info#1{\wlog{Package innerscript Info: #1}}
52 \def\scalemu#1#2{\muexpr#2#1
53   \@plus\muexpr#2\gluetomu\gluestretch\mutoglu#1\relax
54   \@minus\muexpr#2\gluetomu\glueshrink\mutoglu#1\relax\relax}
```

2 Scriptstyle Spacing

First we set the spacing for `\scriptstyle` and `\crampedscriptstyle` atoms. Each space adjustment has the form

$$\Umath\langle classes \rangle spacing\langle style \rangle = \scalemu\{\langle skip \rangle\}{0.6},$$

where the $\langle classes \rangle$ are a pair of choices from `ord`, `op`, `bin`, `rel`, `open`, `close`, `punct`, and `inner`. The $\langle style \rangle$ is either `\scriptstyle` or `\crampedscriptstyle`, and the $\langle skip \rangle$ is the amount of muglue that typically appears between the $\langle classes \rangle$ while in `\textstyle` or `\displaystyle`. As of version 1.2, we use `\scalemu` to scale the muglue registers. Table 1 shows the space inserted with option `script`.

```
55 \ifcase\IS@script % Case 0: No changes
56   \IS@info{No changes to space for \string\scriptstyle\space atoms.}
57   \IS@info{No changes to space for \string\crampedscriptstyle\space atoms.}
58 \or % Case 1: Default changes
59   \IS@info{Adjusting space for \string\scriptstyle\space atoms.}
60   \IS@info{Adjusting space for \string\crampedscriptstyle\space atoms.}
```

Default spacing changes for `\scriptstyle`.

```
61 % \scriptstyle
62 \Umathordopspacing\scriptstyle=\scalemu{\thinmuskip}{0.6}
63 \Umathordbinspacing\scriptstyle=\scalemu{\medmuskip}{0.6}
64 \Umathordrelspacing\scriptstyle=\scalemu{\thickmuskip}{0.6}
65 \Umathordinnerspacing\scriptstyle=\scalemu{\thinmuskip}{0.6}
66 \Umathopordspacing\scriptstyle=\scalemu{\thinmuskip}{0.6}
67 \Umathopopspacing\scriptstyle=\scalemu{\thinmuskip}{0.6}
68 \Umathoprelspacing\scriptstyle=\scalemu{\thickmuskip}{0.6}
69 \Umathopinnerspacing\scriptstyle=\scalemu{\thickmuskip}{0.6}
70 \Umathbinordspacing\scriptstyle=\scalemu{\medmuskip}{0.6}
71 \Umathbinopspacing\scriptstyle=\scalemu{\medmuskip}{0.6}
72 \Umathbinopenspacing\scriptstyle=\scalemu{\medmuskip}{0.6}
73 \Umathbininnerspacing\scriptstyle=\scalemu{\medmuskip}{0.6}
74 \Umathrelordspacing\scriptstyle=\scalemu{\thickmuskip}{0.6}
75 \Umathrelopspacing\scriptstyle=\scalemu{\thickmuskip}{0.6}
76 \Umathrelopenspacing\scriptstyle=\scalemu{\thickmuskip}{0.6}
```

Table 1: Space Inserted with Option `script`

Consecutive Atom Types	Default Space Added	Legacy Space Added
<code>\mathord\mathop</code>	<code>0.6\thinmuskip</code>	<code>0.6\thinmuskip</code>
<code>\mathord\mathbin</code>	<code>0.6\medmuskip</code>	<code>0.7\thinmuskip</code>
<code>\mathord\mathrel</code>	<code>0.6\thickmuskip</code>	<code>\thinmuskip</code>
<code>\mathord\mathinner</code>	<code>0.6\thinmuskip</code>	<code>0.6\thinmuskip</code>
<code>\mathop\mathord</code>	<code>0.6\thinmuskip</code>	<code>0.6\thinmuskip</code>
<code>\mathop\mathop</code>	<code>0.6\thinmuskip</code>	<code>0.6\thinmuskip</code>
<code>\mathop\mathrel</code>	<code>0.6\thickmuskip</code>	<code>\thinmuskip</code>
<code>\mathop\mathinner</code>	<code>0.6\thickmuskip</code>	<code>\thinmuskip</code>
<code>\mathbin\mathord</code>	<code>0.6\medmuskip</code>	<code>0.7\thinmuskip</code>
<code>\mathbin\mathop</code>	<code>0.6\medmuskip</code>	<code>0.7\thinmuskip</code>
<code>\mathbin\mathopen</code>	<code>0.6\medmuskip</code>	<code>0.7\thinmuskip</code>
<code>\mathbin\mathinner</code>	<code>0.6\medmuskip</code>	<code>0.7\thinmuskip</code>
<code>\mathrel\mathord</code>	<code>0.6\thickmuskip</code>	<code>\thinmuskip</code>
<code>\mathrel\mathop</code>	<code>0.6\thickmuskip</code>	<code>\thinmuskip</code>
<code>\mathrel\mathopen</code>	<code>0.6\thickmuskip</code>	<code>\thinmuskip</code>
<code>\mathrel\mathinner</code>	<code>0.6\thickmuskip</code>	<code>\thinmuskip</code>
<code>\mathclose\mathop</code>	<code>0.6\thinmuskip</code>	<code>0.6\thinmuskip</code>
<code>\mathclose\mathbin</code>	<code>0.6\medmuskip</code>	<code>0.7\thinmuskip</code>
<code>\mathclose\mathrel</code>	<code>0.6\thickmuskip</code>	<code>\thinmuskip</code>
<code>\mathclose\mathinner</code>	<code>0.6\thinmuskip</code>	<code>0.6\thinmuskip</code>
<code>\mathpunct\mathord</code>	<code>0.6\thinmuskip</code>	<code>0.6\thinmuskip</code>
<code>\mathpunct\mathop</code>	<code>0.6\thinmuskip</code>	<code>0.6\thinmuskip</code>
<code>\mathpunct\mathrel</code>	<code>0.6\thinmuskip</code>	<code>0.6\thinmuskip</code>
<code>\mathpunct\mathopen</code>	<code>0.6\thinmuskip</code>	<code>0.6\thinmuskip</code>
<code>\mathpunct\mathclose</code>	<code>0.6\thinmuskip</code>	<code>0.6\thinmuskip</code>
<code>\mathpunct\mathpunct</code>	<code>0.6\thinmuskip</code>	<code>0.6\thinmuskip</code>
<code>\mathpunct\mathinner</code>	<code>0.6\thinmuskip</code>	<code>0.6\thinmuskip</code>
<code>\mathinner\mathord</code>	<code>0.6\thinmuskip</code>	<code>0.6\thinmuskip</code>
<code>\mathinner\mathop</code>	<code>0.6\thinmuskip</code>	<code>0.6\thinmuskip</code>
<code>\mathinner\mathbin</code>	<code>0.6\medmuskip</code>	<code>0.7\thinmuskip</code>
<code>\mathinner\mathrel</code>	<code>0.6\thickmuskip</code>	<code>\thinmuskip</code>
<code>\mathinner\mathopen</code>	<code>0.6\thinmuskip</code>	<code>0.6\thinmuskip</code>
<code>\mathinner\mathpunct</code>	<code>0.6\thinmuskip</code>	<code>0.6\thinmuskip</code>
<code>\mathinner\mathinner</code>	<code>0.6\thinmuskip</code>	<code>0.6\thinmuskip</code>

77 `\Umathrelinnerspacing\scriptstyle=\scalemu{\thickmuskip}{0.6}`

78 `\Umathcloseopspacing\scriptstyle=\scalemu{\thinmuskip}{0.6}`

79 `\Umathclosebinspacing\scriptstyle=\scalemu{\medmuskip}{0.6}`

80 `\Umathcloserelspacing\scriptstyle=\scalemu{\thickmuskip}{0.6}`

```

81 \Umathcloseinnerspacing\scriptstyle=\scalemu{\thinmuskip}{0.6}
82 \Umathpunctordspacing\scriptstyle=\scalemu{\thinmuskip}{0.6}
83 \Umathpuncttopspacing\scriptstyle=\scalemu{\thinmuskip}{0.6}
84 \Umathpunctrelspacing\scriptstyle=\scalemu{\thinmuskip}{0.6}
85 \Umathpunctopenspacing\scriptstyle=\scalemu{\thinmuskip}{0.6}
86 \Umathpunctclosespacing\scriptstyle=\scalemu{\thinmuskip}{0.6}
87 \Umathpunctpunctspacing\scriptstyle=\scalemu{\thinmuskip}{0.6}
88 \Umathpunctinnerspacing\scriptstyle=\scalemu{\thinmuskip}{0.6}
89 \Umathinnerordspacing\scriptstyle=\scalemu{\thinmuskip}{0.6}
90 \Umathinneropspacing\scriptstyle=\scalemu{\thinmuskip}{0.6}
91 \Umathinnerbinspacing\scriptstyle=\scalemu{\medmuskip}{0.6}
92 \Umathinnerrelspacing\scriptstyle=\scalemu{\thickmuskip}{0.6}
93 \Umathinneropenspacing\scriptstyle=\scalemu{\thinmuskip}{0.6}
94 \Umathinnerpunctspacing\scriptstyle=\scalemu{\thinmuskip}{0.6}
95 \Umathinnerinnerspacing\scriptstyle=\scalemu{\thinmuskip}{0.6}

```

Default spacing changes for `\crampedscriptstyle`.

```

96 % \crampedscriptstyle
97 \Umathordopspacing\crampedscriptstyle=\scalemu{\thinmuskip}{0.6}
98 \Umathordbinspacing\crampedscriptstyle=\scalemu{\medmuskip}{0.6}
99 \Umathordrelspacing\crampedscriptstyle=\scalemu{\thickmuskip}{0.6}
100 \Umathordinnerspacing\crampedscriptstyle=\scalemu{\thinmuskip}{0.6}
101 \Umathopordspacing\crampedscriptstyle=\scalemu{\thinmuskip}{0.6}
102 \Umathopopspacing\crampedscriptstyle=\scalemu{\thinmuskip}{0.6}
103 \Umathoprelspacing\crampedscriptstyle=\scalemu{\thickmuskip}{0.6}
104 \Umathopinnerspacing\crampedscriptstyle=\scalemu{\thickmuskip}{0.6}
105 \Umathbinordspacing\crampedscriptstyle=\scalemu{\medmuskip}{0.6}
106 \Umathbinopspacing\crampedscriptstyle=\scalemu{\medmuskip}{0.6}
107 \Umathbinopopenspacing\crampedscriptstyle=\scalemu{\medmuskip}{0.6}
108 \Umathbininnerspacing\crampedscriptstyle=\scalemu{\medmuskip}{0.6}
109 \Umathrelordspacing\crampedscriptstyle=\scalemu{\thickmuskip}{0.6}
110 \Umathreloppspacing\crampedscriptstyle=\scalemu{\thickmuskip}{0.6}
111 \Umathreloppspacing\crampedscriptstyle=\scalemu{\thickmuskip}{0.6}
112 \Umathrelinnerspacing\crampedscriptstyle=\scalemu{\thickmuskip}{0.6}
113 \Umathcloseopspacing\crampedscriptstyle=\scalemu{\thinmuskip}{0.6}
114 \Umathclosebinspacing\crampedscriptstyle=\scalemu{\medmuskip}{0.6}
115 \Umathcloserelspacing\crampedscriptstyle=\scalemu{\thickmuskip}{0.6}
116 \Umathcloseinnerspacing\crampedscriptstyle=\scalemu{\thinmuskip}{0.6}
117 \Umathpunctordspacing\crampedscriptstyle=\scalemu{\thinmuskip}{0.6}
118 \Umathpuncttopspacing\crampedscriptstyle=\scalemu{\thinmuskip}{0.6}
119 \Umathpunctrelspacing\crampedscriptstyle=\scalemu{\thinmuskip}{0.6}
120 \Umathpunctopenspacing\crampedscriptstyle=\scalemu{\thinmuskip}{0.6}
121 \Umathpunctclosespacing\crampedscriptstyle=\scalemu{\thinmuskip}{0.6}
122 \Umathpunctpunctspacing\crampedscriptstyle=\scalemu{\thinmuskip}{0.6}
123 \Umathpunctinnerspacing\crampedscriptstyle=\scalemu{\thinmuskip}{0.6}
124 \Umathinnerordspacing\crampedscriptstyle=\scalemu{\thinmuskip}{0.6}
125 \Umathinneropspacing\crampedscriptstyle=\scalemu{\thinmuskip}{0.6}
126 \Umathinnerbinspacing\crampedscriptstyle=\scalemu{\medmuskip}{0.6}

```

```

127 \Umathinnerrelspacing\crampedscriptstyle=\scalemu{\thickmuskip}{0.6}
128 \Umathinneropenspacing\crampedscriptstyle=\scalemu{\thinmuskip}{0.6}
129 \Umathinnerpunctspacing\crampedscriptstyle=\scalemu{\thinmuskip}{0.6}
130 \Umathinnerinnerspacing\crampedscriptstyle=\scalemu{\thinmuskip}{0.6}

```

For backwards compatibility, we provide an option to use the spacing from `innerscript` version 1.1. Note that the old spacing does not use `\scalemu`.

```

131 \or % Case 2: Changes from previous version of innerscript
132 \IS@info{Using v. 1.1 space for \string\scriptstyle\space atoms.}
133 \IS@info{Using v. 1.1 space for \string\crampedscriptstyle\space atoms.}

```

Legacy spacing for `\scriptstyle`.

```

134 % \scriptstyle
135 \Umathordopspacing\scriptstyle=0.6\thinmuskip
136 \Umathordbinspacing\scriptstyle=0.7\thinmuskip
137 \Umathordrelspacing\scriptstyle=\thinmuskip
138 \Umathordinnerspacing\scriptstyle=0.6\thinmuskip
139 \Umathopordspacing\scriptstyle=0.6\thinmuskip
140 \Umathopopspacing\scriptstyle=0.6\thinmuskip
141 \Umathoprelspacing\scriptstyle=\thinmuskip
142 \Umathopinnerspacing\scriptstyle=\thinmuskip
143 \Umathbinordspacing\scriptstyle=0.7\thinmuskip
144 \Umathbinopspacing\scriptstyle=0.7\thinmuskip
145 \Umathbinopenspacing\scriptstyle=0.7\thinmuskip
146 \Umathbininnerspacing\scriptstyle=0.7\thinmuskip
147 \Umathrelordspacing\scriptstyle=\thinmuskip
148 \Umathrelopspacing\scriptstyle=\thinmuskip
149 \Umathrelopenspacing\scriptstyle=\thinmuskip
150 \Umathrelinnerspacing\scriptstyle=\thinmuskip
151 \Umathcloseopspacing\scriptstyle=0.6\thinmuskip
152 \Umathclosebinspacing\scriptstyle=0.7\thinmuskip
153 \Umathcloserelspacing\scriptstyle=\thinmuskip
154 \Umathcloseinnerspacing\scriptstyle=0.6\thinmuskip
155 \Umathpunctordspacing\scriptstyle=0.6\thinmuskip
156 \Umathpunctopspacing\scriptstyle=0.6\thinmuskip
157 \Umathpunctrelspacing\scriptstyle=0.6\thinmuskip
158 \Umathpunctopenspacing\scriptstyle=0.6\thinmuskip
159 \Umathpunctclosespacing\scriptstyle=0.6\thinmuskip
160 \Umathpunctpunctspacing\scriptstyle=0.6\thinmuskip
161 \Umathpunctinnerspacing\scriptstyle=0.6\thinmuskip
162 \Umathinnerordspacing\scriptstyle=0.6\thinmuskip
163 \Umathinneropspacing\scriptstyle=0.6\thinmuskip
164 \Umathinnerbinspacing\scriptstyle=0.7\thinmuskip
165 \Umathinnerrelspacing\scriptstyle=\thinmuskip
166 \Umathinneropenspacing\scriptstyle=0.6\thinmuskip
167 \Umathinnerpunctspacing\scriptstyle=0.6\thinmuskip
168 \Umathinnerinnerspacing\scriptstyle=0.6\thinmuskip

```

Legacy spacing for `\crampedscriptstyle`.

```

169 % \crampedscriptstyle
170 \Umathordopspacing\crampedscriptstyle=0.6\thinmuskip
171 \Umathordbinspacing\crampedscriptstyle=0.7\thinmuskip
172 \Umathordrelspacing\crampedscriptstyle=\thinmuskip
173 \Umathordinnerspacing\crampedscriptstyle=0.6\thinmuskip
174 \Umathopordspacing\crampedscriptstyle=0.6\thinmuskip
175 \Umathopopspacing\crampedscriptstyle=0.6\thinmuskip
176 \Umathoprelspacing\crampedscriptstyle=\thinmuskip
177 \Umathopinnerspacing\crampedscriptstyle=\thinmuskip
178 \Umathbinordspacing\crampedscriptstyle=0.7\thinmuskip
179 \Umathbinopspacing\crampedscriptstyle=0.7\thinmuskip
180 \Umathbinopenspacing\crampedscriptstyle=0.7\thinmuskip
181 \Umathbininnerspacing\crampedscriptstyle=0.7\thinmuskip
182 \Umathrelordspacing\crampedscriptstyle=\thinmuskip
183 \Umathrelopspacing\crampedscriptstyle=\thinmuskip
184 \Umathrelopenspacing\crampedscriptstyle=\thinmuskip
185 \Umathrelinnerspacing\crampedscriptstyle=\thinmuskip
186 \Umathcloseopspacing\crampedscriptstyle=0.6\thinmuskip
187 \Umathclosebinspacing\crampedscriptstyle=0.7\thinmuskip
188 \Umathcloserelspacing\crampedscriptstyle=\thinmuskip
189 \Umathcloseinnerspacing\crampedscriptstyle=0.6\thinmuskip
190 \Umathpunctordspacing\crampedscriptstyle=0.6\thinmuskip
191 \Umathpunctopspacing\crampedscriptstyle=0.6\thinmuskip
192 \Umathpunctrelspacing\crampedscriptstyle=0.6\thinmuskip
193 \Umathpunctopenspacing\crampedscriptstyle=0.6\thinmuskip
194 \Umathpunctclosespacing\crampedscriptstyle=0.6\thinmuskip
195 \Umathpunctpunctspacing\crampedscriptstyle=0.6\thinmuskip
196 \Umathpunctinnerspacing\crampedscriptstyle=0.6\thinmuskip
197 \Umathinnerordspacing\crampedscriptstyle=0.6\thinmuskip
198 \Umathinneropspacing\crampedscriptstyle=0.6\thinmuskip
199 \Umathinnerbinspacing\crampedscriptstyle=0.7\thinmuskip
200 \Umathinnerrelspacing\crampedscriptstyle=\thinmuskip
201 \Umathinneropenspacing\crampedscriptstyle=0.6\thinmuskip
202 \Umathinnerpunctspacing\crampedscriptstyle=0.6\thinmuskip
203 \Umathinnerinnerspacing\crampedscriptstyle=0.6\thinmuskip
204 \fi

```

3 Scriptscriptstyle Spacing

Set the spacing for `\scriptscriptstyle` and `\crampedscriptscriptstyle`. The process is the same as it was for `\scriptstyle` except with a factor of 0.4 instead of 0.6. See Table 2 for amounts of space added with option `scriptscript`.

```

205 \ifcase\IS@scriptscript % Case 0: No changes
206   \IS@info{No changes to space for \string\scriptscriptstyle\space atoms.}
207   \IS@info{No changes to space for
208     \string\crampedscriptscriptstyle\space atoms.}

```

Table 2: Space Inserted with Option `scriptscript`

Consecutive Atom Types	Default Space Added	Legacy Space Added
<code>\mathord\mathop</code>	<code>0.4\thinmuskip</code>	<code>0.4\thinmuskip</code>
<code>\mathord\mathbin</code>	<code>0.4\medmuskip</code>	<code>0.5\thinmuskip</code>
<code>\mathord\mathrel</code>	<code>0.4\thickmuskip</code>	<code>0.7\thinmuskip</code>
<code>\mathord\mathinner</code>	<code>0.4\thinmuskip</code>	<code>0.4\thinmuskip</code>
<code>\mathop\mathord</code>	<code>0.4\thinmuskip</code>	<code>0.4\thinmuskip</code>
<code>\mathop\mathop</code>	<code>0.4\thinmuskip</code>	<code>0.4\thinmuskip</code>
<code>\mathop\mathrel</code>	<code>0.4\thickmuskip</code>	<code>0.7\thinmuskip</code>
<code>\mathop\mathinner</code>	<code>0.4\thickmuskip</code>	<code>0.7\thinmuskip</code>
<code>\mathbin\mathord</code>	<code>0.4\medmuskip</code>	<code>0.5\thinmuskip</code>
<code>\mathbin\mathop</code>	<code>0.4\medmuskip</code>	<code>0.5\thinmuskip</code>
<code>\mathbin\mathopen</code>	<code>0.4\medmuskip</code>	<code>0.5\thinmuskip</code>
<code>\mathbin\mathinner</code>	<code>0.4\medmuskip</code>	<code>0.5\thinmuskip</code>
<code>\mathrel\mathord</code>	<code>0.4\thickmuskip</code>	<code>0.7\thinmuskip</code>
<code>\mathrel\mathop</code>	<code>0.4\thickmuskip</code>	<code>0.7\thinmuskip</code>
<code>\mathrel\mathopen</code>	<code>0.4\thickmuskip</code>	<code>0.7\thinmuskip</code>
<code>\mathrel\mathinner</code>	<code>0.4\thickmuskip</code>	<code>0.7\thinmuskip</code>
<code>\mathclose\mathop</code>	<code>0.4\thinmuskip</code>	<code>0.4\thinmuskip</code>
<code>\mathclose\mathbin</code>	<code>0.4\medmuskip</code>	<code>0.5\thinmuskip</code>
<code>\mathclose\mathrel</code>	<code>0.4\thickmuskip</code>	<code>0.7\thinmuskip</code>
<code>\mathclose\mathinner</code>	<code>0.4\thinmuskip</code>	<code>0.4\thinmuskip</code>
<code>\mathpunct\mathord</code>	<code>0.4\thinmuskip</code>	<code>0.4\thinmuskip</code>
<code>\mathpunct\mathop</code>	<code>0.4\thinmuskip</code>	<code>0.4\thinmuskip</code>
<code>\mathpunct\mathrel</code>	<code>0.4\thinmuskip</code>	<code>0.4\thinmuskip</code>
<code>\mathpunct\mathopen</code>	<code>0.4\thinmuskip</code>	<code>0.4\thinmuskip</code>
<code>\mathpunct\mathclose</code>	<code>0.4\thinmuskip</code>	<code>0.4\thinmuskip</code>
<code>\mathpunct\mathpunct</code>	<code>0.4\thinmuskip</code>	<code>0.4\thinmuskip</code>
<code>\mathpunct\mathinner</code>	<code>0.4\thinmuskip</code>	<code>0.4\thinmuskip</code>
<code>\mathinner\mathord</code>	<code>0.4\thinmuskip</code>	<code>0.4\thinmuskip</code>
<code>\mathinner\mathop</code>	<code>0.4\thinmuskip</code>	<code>0.4\thinmuskip</code>
<code>\mathinner\mathbin</code>	<code>0.4\medmuskip</code>	<code>0.5\thinmuskip</code>
<code>\mathinner\mathrel</code>	<code>0.4\thickmuskip</code>	<code>0.7\thinmuskip</code>
<code>\mathinner\mathopen</code>	<code>0.4\thinmuskip</code>	<code>0.4\thinmuskip</code>
<code>\mathinner\mathpunct</code>	<code>0.4\thinmuskip</code>	<code>0.4\thinmuskip</code>
<code>\mathinner\mathinner</code>	<code>0.4\thinmuskip</code>	<code>0.4\thinmuskip</code>

209 \or % Case 1: Default changes

210 \IS@info{Adjusting space for \string\scriptscriptstyle\space atoms.}

211 \IS@info{Adjusting space for

212 \string\crampedscriptscriptstyle\space atoms.}

Default spacing changes for `\scriptscriptstyle`.

```

213 % \scriptscriptstyle
214 \Umathordopspacing\scriptscriptstyle=\scalemu{\thinmuskip}{0.4}
215 \Umathordbinspacing\scriptscriptstyle=\scalemu{\medmuskip}{0.4}
216 \Umathordrelspacing\scriptscriptstyle=\scalemu{\thickmuskip}{0.4}
217 \Umathordinnerspacing\scriptscriptstyle=\scalemu{\thinmuskip}{0.4}
218 \Umathopordspacing\scriptscriptstyle=\scalemu{\thinmuskip}{0.4}
219 \Umathopopspacing\scriptscriptstyle=\scalemu{\thinmuskip}{0.4}
220 \Umathoprelspacing\scriptscriptstyle=\scalemu{\thickmuskip}{0.4}
221 \Umathopinnerspacing\scriptscriptstyle=\scalemu{\thickmuskip}{0.4}
222 \Umathbinordspacing\scriptscriptstyle=\scalemu{\medmuskip}{0.4}
223 \Umathbinopspacing\scriptscriptstyle=\scalemu{\medmuskip}{0.4}
224 \Umathbinopenspacing\scriptscriptstyle=\scalemu{\medmuskip}{0.4}
225 \Umathbininnerspacing\scriptscriptstyle=\scalemu{\medmuskip}{0.4}
226 \Umathrelordspacing\scriptscriptstyle=\scalemu{\thickmuskip}{0.4}
227 \Umathrelopspacing\scriptscriptstyle=\scalemu{\thickmuskip}{0.4}
228 \Umathrelopenspacing\scriptscriptstyle=\scalemu{\thickmuskip}{0.4}
229 \Umathrelinnerspacing\scriptscriptstyle=\scalemu{\thickmuskip}{0.4}
230 \Umathcloseopspacing\scriptscriptstyle=\scalemu{\thinmuskip}{0.4}
231 \Umathclosebinspacing\scriptscriptstyle=\scalemu{\medmuskip}{0.4}
232 \Umathcloserelspacing\scriptscriptstyle=\scalemu{\thickmuskip}{0.4}
233 \Umathcloseinnerspacing\scriptscriptstyle=\scalemu{\thinmuskip}{0.4}
234 \Umathpunctordspacing\scriptscriptstyle=\scalemu{\thinmuskip}{0.4}
235 \Umathpunctopspacing\scriptscriptstyle=\scalemu{\thinmuskip}{0.4}
236 \Umathpunctrelspacing\scriptscriptstyle=\scalemu{\thinmuskip}{0.4}
237 \Umathpunctopenspacing\scriptscriptstyle=\scalemu{\thinmuskip}{0.4}
238 \Umathpunctclosespacing\scriptscriptstyle=\scalemu{\thinmuskip}{0.4}
239 \Umathpunctpunctspacing\scriptscriptstyle=\scalemu{\thinmuskip}{0.4}
240 \Umathpunctinnerspacing\scriptscriptstyle=\scalemu{\thinmuskip}{0.4}
241 \Umathinnerordspacing\scriptscriptstyle=\scalemu{\thinmuskip}{0.4}
242 \Umathinneropspacing\scriptscriptstyle=\scalemu{\thinmuskip}{0.4}
243 \Umathinnerbinspacing\scriptscriptstyle=\scalemu{\medmuskip}{0.4}
244 \Umathinnerrelspacing\scriptscriptstyle=\scalemu{\thickmuskip}{0.4}
245 \Umathinneropenspacing\scriptscriptstyle=\scalemu{\thinmuskip}{0.4}
246 \Umathinnerpunctspacing\scriptscriptstyle=\scalemu{\thinmuskip}{0.4}
247 \Umathinnerinnerspacing\scriptscriptstyle=\scalemu{\thinmuskip}{0.4}

```

Default spacing changes for `\crampedscriptscriptstyle`.

```

248 % \crampedscriptscriptstyle
249 \Umathordopspacing\crampedscriptscriptstyle=\scalemu
250   {\thinmuskip}{0.4}
251 \Umathordbinspacing\crampedscriptscriptstyle=\scalemu
252   {\medmuskip}{0.4}
253 \Umathordrelspacing\crampedscriptscriptstyle=\scalemu
254   {\thickmuskip}{0.4}
255 \Umathordinnerspacing\crampedscriptscriptstyle=\scalemu
256   {\thinmuskip}{0.4}
257 \Umathopordspacing\crampedscriptscriptstyle=\scalemu

```

```

258   {\thinmuskip}{0.4}
259 \Umathopopspacing\crampedscriptscriptstyle=\scalemu
260   {\thinmuskip}{0.4}
261 \Umathoprelspacing\crampedscriptscriptstyle=\scalemu
262   {\thickmuskip}{0.4}
263 \Umathopinnerspacing\crampedscriptscriptstyle=\scalemu
264   {\thickmuskip}{0.4}
265 \Umathbinordspacing\crampedscriptscriptstyle=\scalemu
266   {\medmuskip}{0.4}
267 \Umathbinopspacing\crampedscriptscriptstyle=\scalemu
268   {\medmuskip}{0.4}
269 \Umathbinopenspacing\crampedscriptscriptstyle=\scalemu
270   {\medmuskip}{0.4}
271 \Umathbininnerspacing\crampedscriptscriptstyle=\scalemu
272   {\medmuskip}{0.4}
273 \Umathrelordspacing\crampedscriptscriptstyle=\scalemu
274   {\thickmuskip}{0.4}
275 \Umathreloppspacing\crampedscriptscriptstyle=\scalemu
276   {\thickmuskip}{0.4}
277 \Umathreloppspacing\crampedscriptscriptstyle=\scalemu
278   {\thickmuskip}{0.4}
279 \Umathrelinnerspacing\crampedscriptscriptstyle=\scalemu
280   {\thickmuskip}{0.4}
281 \Umathcloseopspacing\crampedscriptscriptstyle=\scalemu
282   {\thinmuskip}{0.4}
283 \Umathclosebinspacing\crampedscriptscriptstyle=\scalemu
284   {\medmuskip}{0.4}
285 \Umathcloserelspacing\crampedscriptscriptstyle=\scalemu
286   {\thickmuskip}{0.4}
287 \Umathcloseinnerspacing\crampedscriptscriptstyle=\scalemu
288   {\thinmuskip}{0.4}
289 \Umathpunctordspacing\crampedscriptscriptstyle=\scalemu
290   {\thinmuskip}{0.4}
291 \Umathpunctopspacing\crampedscriptscriptstyle=\scalemu
292   {\thinmuskip}{0.4}
293 \Umathpunctrelspacing\crampedscriptscriptstyle=\scalemu
294   {\thinmuskip}{0.4}
295 \Umathpunctopenspacing\crampedscriptscriptstyle=\scalemu
296   {\thinmuskip}{0.4}
297 \Umathpunctclosespacing\crampedscriptscriptstyle=\scalemu
298   {\thinmuskip}{0.4}
299 \Umathpunctpunctspacing\crampedscriptscriptstyle=\scalemu
300   {\thinmuskip}{0.4}
301 \Umathpunctinnerspacing\crampedscriptscriptstyle=\scalemu
302   {\thinmuskip}{0.4}
303 \Umathinnerordspacing\crampedscriptscriptstyle=\scalemu
304   {\thinmuskip}{0.4}

```

```

305 \Umathinneropspacing\crampedscriptscriptstyle=\scalemu
306   {\thinmuskip}{0.4}
307 \Umathinnerbinspacing\crampedscriptscriptstyle=\scalemu
308   {\medmuskip}{0.4}
309 \Umathinnerrelspacing\crampedscriptscriptstyle=\scalemu
310   {\thickmuskip}{0.4}
311 \Umathinneropenspacing\crampedscriptscriptstyle=\scalemu
312   {\thinmuskip}{0.4}
313 \Umathinnerpunctspacing\crampedscriptscriptstyle=\scalemu
314   {\thinmuskip}{0.4}
315 \Umathinnerinnerspacing\crampedscriptscriptstyle=\scalemu
316   {\thinmuskip}{0.4}

```

Again, provide an option to use spacing from previous version.

```

317 \or % Case 2: Changes from previous version of innerscript
318   \IS@info{Using v. 1.1 space for \string\scriptscriptstyle\space atoms.}
319   \IS@info{Using v. 1.1 space for
320     \string\crampedscriptscriptstyle\space atoms.}

```

Legacy spacing for `\scriptscriptstyle`.

```

321 % \scriptscriptstyle
322 \Umathordopspacing\scriptscriptstyle=0.4\thinmuskip
323 \Umathordbinspacing\scriptscriptstyle=0.5\thinmuskip
324 \Umathordrelspacing\scriptscriptstyle=0.7\thinmuskip
325 \Umathordinnerspacing\scriptscriptstyle=0.4\thinmuskip
326 \Umathopordspacing\scriptscriptstyle=0.4\thinmuskip
327 \Umathopopspacing\scriptscriptstyle=0.4\thinmuskip
328 \Umathoprelspacing\scriptscriptstyle=0.7\thinmuskip
329 \Umathopinnerspacing\scriptscriptstyle=0.7\thinmuskip
330 \Umathbinordspacing\scriptscriptstyle=0.5\thinmuskip
331 \Umathbinopspacing\scriptscriptstyle=0.5\thinmuskip
332 \Umathbinopenspacing\scriptscriptstyle=0.5\thinmuskip
333 \Umathbininnerspacing\scriptscriptstyle=0.5\thinmuskip
334 \Umathrelordspacing\scriptscriptstyle=0.7\thinmuskip
335 \Umathrelopspacing\scriptscriptstyle=0.7\thinmuskip
336 \Umathrelopenspacing\scriptscriptstyle=0.7\thinmuskip
337 \Umathrelinnerspacing\scriptscriptstyle=0.7\thinmuskip
338 \Umathcloseopspacing\scriptscriptstyle=0.4\thinmuskip
339 \Umathclosebinspacing\scriptscriptstyle=0.5\thinmuskip
340 \Umathcloserelspacing\scriptscriptstyle=0.7\thinmuskip
341 \Umathcloseinnerspacing\scriptscriptstyle=0.4\thinmuskip
342 \Umathpunctordspacing\scriptscriptstyle=0.4\thinmuskip
343 \Umathpunctopspacing\scriptscriptstyle=0.4\thinmuskip
344 \Umathpunctrelspacing\scriptscriptstyle=0.4\thinmuskip
345 \Umathpunctopenspacing\scriptscriptstyle=0.4\thinmuskip
346 \Umathpunctclosespacing\scriptscriptstyle=0.4\thinmuskip
347 \Umathpunctpunctspacing\scriptscriptstyle=0.4\thinmuskip
348 \Umathpunctinnerspacing\scriptscriptstyle=0.4\thinmuskip
349 \Umathinnerordspacing\scriptscriptstyle=0.4\thinmuskip

```

```

350 \Umathinneropspacing\scriptscriptstyle=0.4\thinmuskip
351 \Umathinnerbinspacing\scriptscriptstyle=0.5\thinmuskip
352 \Umathinnerrelspacing\scriptscriptstyle=0.7\thinmuskip
353 \Umathinneropenspacing\scriptscriptstyle=0.4\thinmuskip
354 \Umathinnerpunctspacing\scriptscriptstyle=0.4\thinmuskip
355 \Umathinnerinnerspacing\scriptscriptstyle=0.4\thinmuskip

```

Legacy spacing for `\crampedscriptscriptstyle`.

```

356 % \crampedscriptscriptstyle
357 \Umathordopspacing\crampedscriptscriptstyle=0.4\thinmuskip
358 \Umathordbinspacing\crampedscriptscriptstyle=0.5\thinmuskip
359 \Umathordrelspacing\crampedscriptscriptstyle=0.7\thinmuskip
360 \Umathordinnerspacing\crampedscriptscriptstyle=0.4\thinmuskip
361 \Umathopordspacing\crampedscriptscriptstyle=0.4\thinmuskip
362 \Umathopopspacing\crampedscriptscriptstyle=0.4\thinmuskip
363 \Umathoprelspacing\crampedscriptscriptstyle=0.7\thinmuskip
364 \Umathopinnerspacing\crampedscriptscriptstyle=0.7\thinmuskip
365 \Umathbinordspacing\crampedscriptscriptstyle=0.5\thinmuskip
366 \Umathbinopspacing\crampedscriptscriptstyle=0.5\thinmuskip
367 \Umathbinopenspacing\crampedscriptscriptstyle=0.5\thinmuskip
368 \Umathbininnerspacing\crampedscriptscriptstyle=0.5\thinmuskip
369 \Umathrelordspacing\crampedscriptscriptstyle=0.7\thinmuskip
370 \Umathrelopspacing\crampedscriptscriptstyle=0.7\thinmuskip
371 \Umathrelopenspacing\crampedscriptscriptstyle=0.7\thinmuskip
372 \Umathrelinnerspacing\crampedscriptscriptstyle=0.7\thinmuskip
373 \Umathcloseopspacing\crampedscriptscriptstyle=0.4\thinmuskip
374 \Umathclosebinspacing\crampedscriptscriptstyle=0.5\thinmuskip
375 \Umathcloserelspacing\crampedscriptscriptstyle=0.7\thinmuskip
376 \Umathcloseinnerspacing\crampedscriptscriptstyle=0.4\thinmuskip
377 \Umathpunctordspacing\crampedscriptscriptstyle=0.4\thinmuskip
378 \Umathpunctopspacing\crampedscriptscriptstyle=0.4\thinmuskip
379 \Umathpunctrelspacing\crampedscriptscriptstyle=0.4\thinmuskip
380 \Umathpunctopenspacing\crampedscriptscriptstyle=0.4\thinmuskip
381 \Umathpunctclosespacing\crampedscriptscriptstyle=0.4\thinmuskip
382 \Umathpunctpunctspacing\crampedscriptscriptstyle=0.4\thinmuskip
383 \Umathpunctinnerspacing\crampedscriptscriptstyle=0.4\thinmuskip
384 \Umathinnerordspacing\crampedscriptscriptstyle=0.4\thinmuskip
385 \Umathinneropspacing\crampedscriptscriptstyle=0.4\thinmuskip
386 \Umathinnerbinspacing\crampedscriptscriptstyle=0.5\thinmuskip
387 \Umathinnerrelspacing\crampedscriptscriptstyle=0.7\thinmuskip
388 \Umathinneropenspacing\crampedscriptscriptstyle=0.4\thinmuskip
389 \Umathinnerpunctspacing\crampedscriptscriptstyle=0.4\thinmuskip
390 \Umathinnerinnerspacing\crampedscriptscriptstyle=0.4\thinmuskip
391 \fi

```

4 Mathinner Subformulas

Now set the spacing for `\mathinner` subformulas. For every atom type from `ord`, `op`, `bin`, `rel`, `open`, `close`, `punct`, and `inner`, we set the spacing that appears between that atom and a `\mathinner` subformula to the amount that normally appears between that type and a `\mathord` atom. Specifically, every space adjustment has the form

$$\begin{aligned} &\backslash\math\langle atom\rangle\textit{innerspacing}\langle style\rangle= \\ &\quad\backslash\textit{the}\backslash\math\langle atom\rangle\textit{ordspacing}\langle style\rangle\backslash\textit{relax} \end{aligned}$$

or the same with the $\langle atom \rangle$ appearing after the `inner` or `ord`. The $\langle style \rangle$ is one of the eight math style commands: `\displaystyle`, `\textstyle`, `\scriptstyle`, `\scriptscriptstyle`, and the cramped versions. Section 4 comes after Sections 2 and 3 because we make sure to capture all spacing changes in superscripts and subscripts.

```
392 \ifIS@inner
393 \IS@info{Adjusting space for \string\mathinner\space subformulas.}
```

First, we handle the cases where the first subformula is not `\mathinner` and the second subformula is `\mathinner`. We start with `\displaystyle`.

```
394 % \displaystyle
395 \Umathordinnerspacing\displaystyle=
396 \the\Umathordordspacing\displaystyle\relax
397 \Umathopinnerspacing\displaystyle=
398 \the\Umathopordspacing\displaystyle\relax
399 \Umathbininnerspacing\displaystyle=
400 \the\Umathbinordspacing\displaystyle\relax
401 \Umathrelinnerspacing\displaystyle=
402 \the\Umathrelordspacing\displaystyle\relax
403 \Umathopeninnerspacing\displaystyle=
404 \the\Umathopenordspacing\displaystyle\relax
405 \Umathcloseinnerspacing\displaystyle=
406 \the\Umathcloseordspacing\displaystyle\relax
407 \Umathpunctinnerspacing\displaystyle=
408 \the\Umathpunctordspacing\displaystyle\relax
```

Changes for `\textstyle`.

```
409 % \textstyle
410 \Umathordinnerspacing\textstyle=
411 \the\Umathordordspacing\textstyle\relax
412 \Umathopinnerspacing\textstyle=
413 \the\Umathopordspacing\textstyle\relax
414 \Umathbininnerspacing\textstyle=
415 \the\Umathbinordspacing\textstyle\relax
416 \Umathrelinnerspacing\textstyle=
417 \the\Umathrelordspacing\textstyle\relax
418 \Umathopeninnerspacing\textstyle=
419 \the\Umathopenordspacing\textstyle\relax
420 \Umathcloseinnerspacing\textstyle=
421 \the\Umathcloseordspacing\textstyle\relax
```

```
422 \Umathpunctinnerspacing\textstyle=
423   \the\Umathpunctordspacing\textstyle\relax
```

Changes for `\scriptstyle`.

```
424 % \scriptstyle
425 \Umathordinnerspacing\scriptstyle=
426   \the\Umathordordspacing\scriptstyle\relax
427 \Umathopinnerspacing\scriptstyle=
428   \the\Umathopordspacing\scriptstyle\relax
429 \Umathbininnerspacing\scriptstyle=
430   \the\Umathbinordspacing\scriptstyle\relax
431 \Umathrelinnerspacing\scriptstyle=
432   \the\Umathrelordspacing\scriptstyle\relax
433 \Umathopeninnerspacing\scriptstyle=
434   \the\Umathopenordspacing\scriptstyle\relax
435 \Umathcloseinnerspacing\scriptstyle=
436   \the\Umathcloseordspacing\scriptstyle\relax
437 \Umathpunctinnerspacing\scriptstyle=
438   \the\Umathpunctordspacing\scriptstyle\relax
```

Changes for `\scriptscriptstyle`.

```
439 % \scriptscriptstyle
440 \Umathordinnerspacing\scriptscriptstyle=
441   \the\Umathordordspacing\scriptscriptstyle\relax
442 \Umathopinnerspacing\scriptscriptstyle=
443   \the\Umathopordspacing\scriptscriptstyle\relax
444 \Umathbininnerspacing\scriptscriptstyle=
445   \the\Umathbinordspacing\scriptscriptstyle\relax
446 \Umathrelinnerspacing\scriptscriptstyle=
447   \the\Umathrelordspacing\scriptscriptstyle\relax
448 \Umathopeninnerspacing\scriptscriptstyle=
449   \the\Umathopenordspacing\scriptscriptstyle\relax
450 \Umathcloseinnerspacing\scriptscriptstyle=
451   \the\Umathcloseordspacing\scriptscriptstyle\relax
452 \Umathpunctinnerspacing\scriptscriptstyle=
453   \the\Umathpunctordspacing\scriptscriptstyle\relax
```

Changes for `\crampeddisplaystyle`.

```
454 % \crampeddisplaystyle
455 \Umathordinnerspacing\crampeddisplaystyle=
456   \the\Umathordordspacing\crampeddisplaystyle\relax
457 \Umathopinnerspacing\crampeddisplaystyle=
458   \the\Umathopordspacing\crampeddisplaystyle\relax
459 \Umathbininnerspacing\crampeddisplaystyle=
460   \the\Umathbinordspacing\crampeddisplaystyle\relax
461 \Umathrelinnerspacing\crampeddisplaystyle=
462   \the\Umathrelordspacing\crampeddisplaystyle\relax
463 \Umathopeninnerspacing\crampeddisplaystyle=
464   \the\Umathopenordspacing\crampeddisplaystyle\relax
```

```

465 \Umathcloseinnerspacing\crampeddisplaystyle=
466   \the\Umathcloseordspacing\crampeddisplaystyle\relax
467 \Umathpunctinnerspacing\crampeddisplaystyle=
468   \the\Umathpunctordspacing\crampeddisplaystyle\relax

```

Changes for `\crampedtextstyle`.

```

469 % \crampedtextstyle
470 \Umathordinnerspacing\crampedtextstyle=
471   \the\Umathordordspacing\crampedtextstyle\relax
472 \Umathopinnerspacing\crampedtextstyle=
473   \the\Umathopordspacing\crampedtextstyle\relax
474 \Umathbininnerspacing\crampedtextstyle=
475   \the\Umathbinordspacing\crampedtextstyle\relax
476 \Umathrelinnerspacing\crampedtextstyle=
477   \the\Umathrelordspacing\crampedtextstyle\relax
478 \Umathopeninnerspacing\crampedtextstyle=
479   \the\Umathopenordspacing\crampedtextstyle\relax
480 \Umathcloseinnerspacing\crampedtextstyle=
481   \the\Umathcloseordspacing\crampedtextstyle\relax
482 \Umathpunctinnerspacing\crampedtextstyle=
483   \the\Umathpunctordspacing\crampedtextstyle\relax

```

Changes for `\crampedscriptstyle`.

```

484 % \crampedscriptstyle
485 \Umathordinnerspacing\crampedscriptstyle=
486   \the\Umathordordspacing\crampedscriptstyle\relax
487 \Umathopinnerspacing\crampedscriptstyle=
488   \the\Umathopordspacing\crampedscriptstyle\relax
489 \Umathbininnerspacing\crampedscriptstyle=
490   \the\Umathbinordspacing\crampedscriptstyle\relax
491 \Umathrelinnerspacing\crampedscriptstyle=
492   \the\Umathrelordspacing\crampedscriptstyle\relax
493 \Umathopeninnerspacing\crampedscriptstyle=
494   \the\Umathopenordspacing\crampedscriptstyle\relax
495 \Umathcloseinnerspacing\crampedscriptstyle=
496   \the\Umathcloseordspacing\crampedscriptstyle\relax
497 \Umathpunctinnerspacing\crampedscriptstyle=
498   \the\Umathpunctordspacing\crampedscriptstyle\relax

```

Changes for `\crampedscriptscriptstyle`.

```

499 % \crampedscriptscriptstyle
500 \Umathordinnerspacing\crampedscriptscriptstyle=
501   \the\Umathordordspacing\crampedscriptscriptstyle\relax
502 \Umathopinnerspacing\crampedscriptscriptstyle=
503   \the\Umathopordspacing\crampedscriptscriptstyle\relax
504 \Umathbininnerspacing\crampedscriptscriptstyle=
505   \the\Umathbinordspacing\crampedscriptscriptstyle\relax
506 \Umathrelinnerspacing\crampedscriptscriptstyle=
507   \the\Umathrelordspacing\crampedscriptscriptstyle\relax

```

```

508 \Umathopeninnerspacing\crampedscriptscriptstyle=
509   \the\Umathopenordspacing\crampedscriptscriptstyle\relax
510 \Umathcloseinnerspacing\crampedscriptscriptstyle=
511   \the\Umathcloseordspacing\crampedscriptscriptstyle\relax
512 \Umathpunctinnerspacing\crampedscriptscriptstyle=
513   \the\Umathpunctordspacing\crampedscriptscriptstyle\relax

```

Now handle the case when the first subformula is `\mathinner` followed by something else. Again we start with `\displaystyle`.

```

514 % \displaystyle
515 \Umathinnerordspacing\displaystyle=
516   \the\Umathordordspacing\displaystyle\relax
517 \Umathinneropspacing\displaystyle=
518   \the\Umathordopspacing\displaystyle\relax
519 \Umathinnerbinspacing\displaystyle=
520   \the\Umathordbinspacing\displaystyle\relax
521 \Umathinnerrelspacing\displaystyle=
522   \the\Umathordrelspacing\displaystyle\relax
523 \Umathinneropenspacing\displaystyle=
524   \the\Umathordopenspacing\displaystyle\relax
525 \Umathinnerclosespacing\displaystyle=
526   \the\Umathordclosespacing\displaystyle\relax
527 \Umathinnerpunctspacing\displaystyle=
528   \the\Umathordpunctspacing\displaystyle\relax

```

Changes for `\textstyle`.

```

529 % \textstyle
530 \Umathinnerordspacing\textstyle=
531   \the\Umathordordspacing\textstyle\relax
532 \Umathinneropspacing\textstyle=
533   \the\Umathordopspacing\textstyle\relax
534 \Umathinnerbinspacing\textstyle=
535   \the\Umathordbinspacing\textstyle\relax
536 \Umathinnerrelspacing\textstyle=
537   \the\Umathordrelspacing\textstyle\relax
538 \Umathinneropenspacing\textstyle=
539   \the\Umathordopenspacing\textstyle\relax
540 \Umathinnerclosespacing\textstyle=
541   \the\Umathordclosespacing\textstyle\relax
542 \Umathinnerpunctspacing\textstyle=
543   \the\Umathordpunctspacing\textstyle\relax

```

Changes for `\scriptstyle`.

```

544 % \scriptstyle
545 \Umathinnerordspacing\scriptstyle=
546   \the\Umathordordspacing\scriptstyle\relax
547 \Umathinneropspacing\scriptstyle=
548   \the\Umathordopspacing\scriptstyle\relax
549 \Umathinnerbinspacing\scriptstyle=

```



```

550   \the\Umathordbinspacing\scriptstyle\relax
551   \Umathinnerrelspacing\scriptstyle=
552   \the\Umathordrelspacing\scriptstyle\relax
553   \Umathinneropenspacing\scriptstyle=
554   \the\Umathordopenspacing\scriptstyle\relax
555   \Umathinnerclosespacing\scriptstyle=
556   \the\Umathordclosespacing\scriptstyle\relax
557   \Umathinnerpunctspacing\scriptstyle=
558   \the\Umathordpunctspacing\scriptstyle\relax

```

Changes for `\scriptscriptstyle`.

```

559   % \scriptscriptstyle
560   \Umathinnerordspacing\scriptscriptstyle=
561   \the\Umathordordspacing\scriptscriptstyle\relax
562   \Umathinneropspacing\scriptscriptstyle=
563   \the\Umathordopspacing\scriptscriptstyle\relax
564   \Umathinnerbinspacing\scriptscriptstyle=
565   \the\Umathordbinspacing\scriptscriptstyle\relax
566   \Umathinnerrelspacing\scriptscriptstyle=
567   \the\Umathordrelspacing\scriptscriptstyle\relax
568   \Umathinneropenspacing\scriptscriptstyle=
569   \the\Umathordopenspacing\scriptscriptstyle\relax
570   \Umathinnerclosespacing\scriptscriptstyle=
571   \the\Umathordclosespacing\scriptscriptstyle\relax
572   \Umathinnerpunctspacing\scriptscriptstyle=
573   \the\Umathordpunctspacing\scriptscriptstyle\relax

```

Changes for `\crampeddisplaystyle`.

```

574   % \crampeddisplaystyle
575   \Umathinnerordspacing\crampeddisplaystyle=
576   \the\Umathordordspacing\crampeddisplaystyle\relax
577   \Umathinneropspacing\crampeddisplaystyle=
578   \the\Umathordopspacing\crampeddisplaystyle\relax
579   \Umathinnerbinspacing\crampeddisplaystyle=
580   \the\Umathordbinspacing\crampeddisplaystyle\relax
581   \Umathinnerrelspacing\crampeddisplaystyle=
582   \the\Umathordrelspacing\crampeddisplaystyle\relax
583   \Umathinneropenspacing\crampeddisplaystyle=
584   \the\Umathordopenspacing\crampeddisplaystyle\relax
585   \Umathinnerclosespacing\crampeddisplaystyle=
586   \the\Umathordclosespacing\crampeddisplaystyle\relax
587   \Umathinnerpunctspacing\crampeddisplaystyle=
588   \the\Umathordpunctspacing\crampeddisplaystyle\relax

```

Changes for `\crampedtextstyle`.

```

589   % \crampedtextstyle
590   \Umathinnerordspacing\crampedtextstyle=
591   \the\Umathordordspacing\crampedtextstyle\relax
592   \Umathinneropspacing\crampedtextstyle=

```

```

593 \the\Umathordopspacing\crampedtextstyle\relax
594 \Umathinnerbinspacing\crampedtextstyle=
595 \the\Umathordbinspacing\crampedtextstyle\relax
596 \Umathinnerrelspacing\crampedtextstyle=
597 \the\Umathordrelspacing\crampedtextstyle\relax
598 \Umathinneropenspacing\crampedtextstyle=
599 \the\Umathordopenspacing\crampedtextstyle\relax
600 \Umathinnerclosespacing\crampedtextstyle=
601 \the\Umathordclosespacing\crampedtextstyle\relax
602 \Umathinnerpunctspacing\crampedtextstyle=
603 \the\Umathordpunctspacing\crampedtextstyle\relax

```

Changes for `\crampedscriptstyle`.

```

604 % \crampedscriptstyle
605 \Umathinnerordspacing\crampedscriptstyle=
606 \the\Umathordordspacing\crampedscriptstyle\relax
607 \Umathinneropspacing\crampedscriptstyle=
608 \the\Umathordopspacing\crampedscriptstyle\relax
609 \Umathinnerbinspacing\crampedscriptstyle=
610 \the\Umathordbinspacing\crampedscriptstyle\relax
611 \Umathinnerrelspacing\crampedscriptstyle=
612 \the\Umathordrelspacing\crampedscriptstyle\relax
613 \Umathinneropenspacing\crampedscriptstyle=
614 \the\Umathordopenspacing\crampedscriptstyle\relax
615 \Umathinnerclosespacing\crampedscriptstyle=
616 \the\Umathordclosespacing\crampedscriptstyle\relax
617 \Umathinnerpunctspacing\crampedscriptstyle=
618 \the\Umathordpunctspacing\crampedscriptstyle\relax

```

Changes for `\crampedscriptscriptstyle`.

```

619 % \crampedscriptscriptstyle
620 \Umathinnerordspacing\crampedscriptscriptstyle=
621 \the\Umathordordspacing\crampedscriptscriptstyle\relax
622 \Umathinneropspacing\crampedscriptscriptstyle=
623 \the\Umathordopspacing\crampedscriptscriptstyle\relax
624 \Umathinnerbinspacing\crampedscriptscriptstyle=
625 \the\Umathordbinspacing\crampedscriptscriptstyle\relax
626 \Umathinnerrelspacing\crampedscriptscriptstyle=
627 \the\Umathordrelspacing\crampedscriptscriptstyle\relax
628 \Umathinneropenspacing\crampedscriptscriptstyle=
629 \the\Umathordopenspacing\crampedscriptscriptstyle\relax
630 \Umathinnerclosespacing\crampedscriptscriptstyle=
631 \the\Umathordclosespacing\crampedscriptscriptstyle\relax
632 \Umathinnerpunctspacing\crampedscriptscriptstyle=
633 \the\Umathordpunctspacing\crampedscriptscriptstyle\relax

```

Finally the case where both subformulas are `\mathinner`.

```

634 % both subformulas are \mathinner
635 \Umathinnerinnerspacing\displaystyle=

```

```

636   \the\Umathordordspacing\displaystyle\relax
637   \Umathinnerinnerspacing\textstyle=
638   \the\Umathordordspacing\textstyle\relax
639   \Umathinnerinnerspacing\scriptstyle=
640   \the\Umathordordspacing\scriptstyle\relax
641   \Umathinnerinnerspacing\scriptscriptstyle=
642   \the\Umathordordspacing\scriptscriptstyle\relax
643   \Umathinnerinnerspacing\crampeddisplaystyle=
644   \the\Umathordordspacing\crampeddisplaystyle\relax
645   \Umathinnerinnerspacing\crampedtextstyle=
646   \the\Umathordordspacing\crampedtextstyle\relax
647   \Umathinnerinnerspacing\crampedscriptstyle=
648   \the\Umathordordspacing\crampedscriptstyle\relax
649   \Umathinnerinnerspacing\crampedscriptscriptstyle=
650   \the\Umathordordspacing\crampedscriptscriptstyle\relax
651 \else
652   \IS@info{No changes to space for \string\mathinner\space subformulas.}
653 \fi

```

5 Mathclose Spacing

In `\textstyle` and `\displaystyle`, we add half a `\thinmuskip` between `\mathclose` and `\mathord` atoms. As with the `script` and `scriptscript` options, we scale the spacing by 0.6 and 0.4 for `\scriptstyle` and `\scriptscriptstyle` respectively. Section 5 comes after Section 4 because we do not want to enlarge the spacing between `\mathclose` and `\mathinner` subformulas.

```

654 \ifIS@close
655   \IS@info{Adding space after closing delimiters.}
656   \Umathcloseordspacing\displaystyle=\scalemu{\thinmuskip}{0.5}
657   \Umathcloseordspacing\textstyle=\scalemu{\thinmuskip}{0.5}
658   \Umathcloseordspacing\crampeddisplaystyle=\scalemu{\thinmuskip}{0.5}
659   \Umathcloseordspacing\crampedtextstyle=\scalemu{\thinmuskip}{0.5}
660   \ifnum\IS@script>0
661     \Umathcloseordspacing\scriptstyle=\scalemu{\thinmuskip}{0.3}
662     \Umathcloseordspacing\crampedscriptstyle=\scalemu{\thinmuskip}{0.3}
663   \fi
664   \ifnum\IS@scriptscript>0
665     \Umathcloseordspacing\scriptscriptstyle=\scalemu{\thinmuskip}{0.2}
666     \Umathcloseordspacing\crampedscriptscriptstyle=\scalemu
667       {\thinmuskip}{0.2}
668   \fi
669 \else
670   \IS@info{No changes to space after delimiters.}
671 \fi

```

6 Delimiter Heights

Finally, filling out the delimiter heights is easy. We simply set `\delimiterfactor` to 1000.

```
672 \ifIS@cover
673   \IS@info{Setting delimiters to full height.}
674   \delimiterfactor\@m
675 \else
676   \IS@info{No changes to delimiter heights.}
677 \fi
```

And that's a wrap!

Version History

1.0 February 2021

—initial release

1.1 February 2021

—bug fix for `\mathinner` spacing

—added `\IS@skip` muglue register

1.2 November 2023

—redesigned spacing for options `script`
and `scriptscript`

—no more `\IS@skip`—options `script` and
`scriptscript` now use `\the`

—added option `close`

—added option `cover`

—separated implementation and user guide