

# The latex-lab-mathpkg code\*

L<sup>A</sup>T<sub>E</sub>X Project

May 29, 2026

Abstract

## Contents

<b>1</b>	<b>Introduction</b>	<b>1</b>
<b>2</b>	<b>The Implementation</b>	<b>1</b>
2.1	File declaration . . . . .	1
2.2	breqn . . . . .	1
2.3	cases . . . . .	2
2.4	bm . . . . .	2
2.5	amsmath timing . . . . .	2
	<b>Index</b>	<b>3</b>

## 1 Introduction

This file implements adaption to various math packages needed for the tagging project.

## 2 The Implementation

<sup>1</sup> `<@=math>`

<sup>2</sup> `<*kernel>`

### 2.1 File declaration

<sup>3</sup> `\ProvidesFile{latex-lab-mathpkg.ltx}`

<sup>4</sup> `[2026-05-11 v0.1e mathpkg adaption]`

---

\*

## 2.2 breqn

```

5 \AddToHook{package/breqn/after}{
6   \RegisterMathEnvironment{dmath}
7   \RegisterMathEnvironment{dgroup*}
8   \AddToHook{env/dmath/begin}{\tagpdfparaOff}
9   \AddToHook{env/dgroup*/begin}{\tagpdfparaOff}
10 }

```

## 2.3 cases

Force loading of amsmath before cases.

```

11 \AddToHook{package/cases/before}{\RequirePackage{amsmath}}
12 \AddToHook{package/cases/after}{
13   \RegisterMathEnvironment{subnumcases}
14 }

```

## 2.4 bm

Similar to the amsbsy code in latex-lab-amsmath for `\pmb` we need to mark up copies as artifact (with mathml-SE this probably has the same problem as `\pmb`):

```

15 \ExplSyntaxOn
16 \cs_new:Npn\__math_patch_bm_pmb:
17 {
18   \NewTaggingSocket{bm/pmb}{2}
19   \NewTaggingSocketPlug{bm/pmb}{default}
20   {
21     \tag_mc_end:\tag_mc_begin:n{artifact}
22     \tag_mc_reset_box:N##1
23     ##2
24     \tag_mc_end:
25     \tag_mc_begin:n{
26   }
27   \AssignTaggingSocketPlug{bm/pmb}{default}
28   \def\bm@pmb@##1##2##3{%
29     \hbox_set:Nn\l__math_tmpa_box{$\m@th##1##3$}%
30     \dimen@##2\wd\tw@
31     \rlap{\box_use:N\l__math_tmpa_box}%
32     \UseTaggingSocket{bm/pmb}{\l__math_tmpa_box}
33     {
34       \kern\dimen@
35       \raise1.5\dimen@\rlap{\box_use:N\l__math_tmpa_box}%
36       \kern\dimen@
37       \box_use_drop:N\l__math_tmpa_box
38     }
39   }
40 \AddToHook{package/bm/after}
41 { \__math_patch_bm_pmb: }
42 \ExplSyntaxOff

```

## 2.5 amsmath timing

These packages error or lose their function if loaded before amsmath.

```

43 \AddToHook{package/accents/before}{\RequirePackage{amsmath}}
44 \AddToHook{package/cleveref/before}{\RequirePackage{amsmath}}
45 \AddToHook{package/esint/before}{\RequirePackage{amsmath}}
46 \AddToHook{package/grmath/before}{\RequirePackage{amsmath}}
47 \AddToHook{package/mathabx/before}{\RequirePackage{amsmath}}
48 \AddToHook{package/wasysym/before}{\RequirePackage{amsmath}}

49 </kernel>

```

# Index

The italic numbers denote the pages where the corresponding entry is described, numbers underlined point to the definition, all others indicate the places where it is used.

<b>A</b>		<b>N</b>	
\AddToHook	5, 8, 9, 11, 12, 40, 43, 44, 45, 46, 47, 48	\NewTaggingSocket	18
\AssignTaggingSocketPlug	27	\NewTaggingSocketPlug	19
<b>B</b>		<b>P</b>	
box commands:		\pmb	2
\box_use:N	31, 35	\ProvidesFile	3
\box_use_drop:N	37	<b>R</b>	
box internal commands:		\raise	35
\l__math_tmpa_box	29, 31, 32, 35, 37	\RegisterMathEnvironment	6, 7, 13
<b>C</b>		\RequirePackage	11, 43, 44, 45, 46, 47, 48
cs commands:		\rlap	31, 35
\cs_new:Npn	16	<b>T</b>	
<b>D</b>		tag commands:	
\def	28	\tag_mc_begin:n	21, 25
<b>E</b>		\tag_mc_end:	21, 24
\ExplSyntaxOff	42	\tag_mc_reset_box:N	22
\ExplSyntaxOn	15	\tagpdfparaOff	8, 9
<b>H</b>		TeX and L <sup>A</sup> T <sub>E</sub> X 2 <sub>ε</sub> commands:	
hbox commands:		\bm@pmb@@	28
\hbox_set:Nn	29	\dimen@	30, 34, 35, 36
<b>K</b>		\m@th	29
\kern	34, 36	\tw@	30
<b>M</b>		<b>U</b>	
math internal commands:		\UseTaggingSocket	32
\__math_patch_bm_pmb:	16, 41	<b>W</b>	
		\wd	30