

The latex-lab-unicode-math code\*

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

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1 Introduction

This file implements temporary adaptations to the unicode-math package needed for the tagging project.

2 The Implementation

```
1 <@@=math>
2 <*kernel>
2.1 File declaration
3 \ProvidesExplFile
4 {latex-lab-unicode-math.ltx}
5 {2025-02-26}
6 {0.1b}
7 {unicode-math adaptations}
```

---

\*

## 2.2 Sockets

Unicode glyphs like a root sign should be marked as artifacts to avoid duplication in derivation if mathml structure elements are used. This is done with a luamml socket.

```

8 \str_if_exist:cF { l__socket_tagsupport/math/luamml/artifact_plug_str }
9 {
10   \NewTaggingSocket{math/luamml/artifact}{0}
11 }

```

## 2.3 Delimiters

Extensible delimiters set with `\bigl`, `\Bigl`, etc. use boxes in their definitions. This gives wrong structure elements if used with luamml. We therefore redefine the internal `amsmath` command to make use of the `luatex` primitive.

`\bBigg@`

```

12 \def\bBigg@#1#2
13 {{\ensuremath {\Uvextensible height~#1 \big@size axis-exact~#2}}}

```

*(End of definition for \bBigg@. This function is documented on page ??.)*

## 2.4 varlim-commands

The commands `\varinjlim`, `\varliminf`, `\varprojlim` and `\varlimsup` use boxes that confuse luamml. We redefine them to use `luatex` primitives. This slightly changes the look!

```

14 \protected\def\varinjlim
15 {{\Udelimiterunder 0 "2192 {\qopname\relax o{\luamml_ignore:\mathstrut lim}}}}
16 \protected\def\varprojlim
17 {{\Udelimiterunder 0 "2190 {\qopname\relax o{\luamml_ignore:\mathstrut lim}}}}
18 \protected\def\varlimsup
19 {{\overline{\qopname\relax o{\luamml_ignore:\mathstrut lim}}}}
20 \protected\def\varliminf
21 {{\underline{\qopname\relax o{lim}}}}

```

## 2.5 Roots

Roots have two problems in tagging: At first, if mathml structure elements are used, the root symbol is given twice: as Unicode char and through the `msqrt` or `mroot` mathml structure element. In derivation this leads to duplications. The glyph should be tagged as artifact in this case. At second, in some cases complicated box constructions instead of the `luatex` primitives are used which leads to wrong tagging. We redefine `\sqrtsign` and add the artifact socket for the first problem.

TODO: A root with empty argument should be tagged differently.

```

22 \AtBeginDocument
23 {
24   \cs_gset_protected_nopar:Npn \sqrtsign
25   {
26     \tag_socket_use:n {math/luamml/artifact}
27     \tex_Uradical:D \symoperators "0221A\scan_stop:
28   }
29 }

```

TODO: Tagging of `\sqrt[\leftroot{-2}\uproot{2}\beta]{y}` is currently incorrect, but setting `\Umathradicaldegreeraise` and `\Umathradicaldegreeafter` does not work, so another solution must be found (or a warning must be issued).

```

30 \cs_set_nopar:Npn \plainroot@ #1 \of #2
31 {
32   \bool_if:nTF
33   {
34     \__um_int_if_zero_p:n \uproot@ && \__um_int_if_zero_p:n \leftroot@
35   }
36   {
37     \tag_socket_use:n {math/luamml/artifact}
38     \Uroot \c__um_radical_sqrt_tl { #1 } { #2 }
39   }
40   {
41     \hbox_set:Nn \rootbox
42     {
43       \c_math_toggle_token \m@th
44       \scriptscriptstyle { #1 }
45       \c_math_toggle_token
46     }
47     \mathchoice
48     { \r@@t \displaystyle { #2 } }
49     { \r@@t \textstyle { #2 } }
50     { \r@@t \scriptstyle { #2 } }
51     { \r@@t \scriptscriptstyle { #2 } }
52   }
53   \c_group_end_token
54 }

```

## 2.6 Fractions

Similar to roots in fractions the rule must be marked as artifact.

```

55 \DeclareRobustCommand {\frac}[2]
56 {{\tag_socket_use:n{math/luamml/artifact}\Ustack{\begingroup#1\endgroup\@@over#2}}}
57 </kernel>

```

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