An Introduction to Mathematics in LaTeX

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1 Introduction

Writing out a fixed-length sequence of move symbols can be tedious, so we introduce a shorthand for specifying the number of successive touch-move events using the notation

$$\left(M_{T_{ID}}^{A_1:A_2:A_{3\cdots}}\right)^{t_1-t_2}$$

which generates the expression that matches t_1 to t_2 successive $M_{T_{ID}}^{A_1:A_2:A_{3\cdots}}$ events. The t_2 parameter is optional. Proton++ expands the shorthand into t_1 consecutive move symbols if t_2 is not specified. It generates the disjunction of t_1 consecutive move symbols to t_2 move symbols if t_2 is specified. For example, a touch and hold that lasts at least five consecutive move events is expressed as $D_1^\bullet(M_1^\bullet)^5 M_1^{\bullet *} U_1^\bullet$, which expands to $D_1^\bullet M_1^\bullet M_1^\bullet M_1^\bullet M_1^\bullet M_1^\bullet M_1^{\bullet *} U_1^\bullet$. A tap of one to five move events is expressed as $D_1^\bullet(M_1^\bullet)^{1-5} U_1^\bullet$, which expands to $D_1^\bullet(M_1^\bullet|M_1^\bullet M_1^\bullet|...|M_1^\bullet M_1^\bullet M_1^\bullet M_1^\bullet M_1^\bullet)U_1^\bullet$. We also update the tablature with timing notation as shown in Figure 11a. The developer can specify a range t_1 to t_2 within the gray move nodes.