

The Kinetic Heavy Quark Mass to Three Loop

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We compute three-loop corrections to the relation between the heavy quark masses defined in the pole and kinetic schemes. Using known relations between the pole and $\overline{\text{MS}}$ quark masses we can establish precise relations between the kinetic and $\overline{\text{MS}}$ charm and bottom masses. As compared to two loops, the precision is improved by a factor two to three. Our results constitute important ingredients for the precise determination of the Cabibbo-Kobayashi-Maskawa matrix element V_{cb} at Belle-II.

Presenter(s) : SCHOENWALD, Kay (KIT)

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