

Top mass: challenges in definition and determination

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Measuring the top-quark running mass

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The top-quark mass is a fundamental parameter of the Standard Model. We will motivate, why precision determinations of the top-quark mass are important in the upcoming high-energy run of the LHC and discuss the prerequisites in theory for the extraction of a well-defined mass parameter in a given renormalization scheme.

We show that the top-quark's running mass in the $\overline{\text{MS}}$ scheme can be extracted with good precision at next-to-next-to-leading order in QCD and discuss a number of suitable observables.

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