



Contribution ID: 268

Type: not specified

The bottom-quark mass from non-relativistic sum rules at NNNLO

Monday, 29 August 2016 18:30 (20 minutes)

The mass of the bottom quark can be determined with high precision from moments of the pair-production cross section $\sigma(e^+e^- \rightarrow b\bar{b})$ near threshold. We present the first complete NNNLO determination from non-relativistic sum rules, obtaining a bottom-quark mass of $m_b^{\text{PS}}(2 \text{ GeV}) = 4.532_{-0.039}^{+0.013} \text{ GeV}$ in the potential-subtracted scheme. For the mass in the $\overline{\text{MS}}$ scheme we find $m_b^{\overline{\text{MS}}}(m_b^{\overline{\text{MS}}}) = 4.203_{-0.034}^{+0.016} \text{ GeV}$ using the recently computed four-loop correction to the scheme conversion.

Summary

Primary author: PICLUM, Jan (University of Siegen)

Presenter: PICLUM, Jan (University of Siegen)

Session Classification: Section C

Track Classification: Section C: Heavy Quarks