



Contribution ID: 86

Type: parallel talk

Top-quark pole mass in the tadpole-free \overline{MS} scheme

Monday 9 May 2016 14:30 (15 minutes)

The complex pole mass of the top quark is presented at full two-loop order in the Standard Model, augmenting the known four-loop QCD contributions. The input parameters are the \overline{MS} -bar Yukawa and gauge couplings, the Higgs self-coupling, and the Higgs vacuum expectation value (VEV). Here, the VEV is defined as the minimum of the full effective potential in Landau gauge, so that tadpoles vanish. This is an alternative to earlier results that instead minimize the tree-level potential, resulting in a VEV that is gauge-fixing independent but accompanied by negative powers of the Higgs self-coupling in perturbative expansions. The effects of non-zero Goldstone boson mass are eliminated by resummation. I also study the renormalization scale dependence of the calculated pole mass.

Summary

Author: MARTIN, Stephen (Northern Illinois University)

Presenter: MARTIN, Stephen (Northern Illinois University)

Session Classification: Top