

## **Precision Standard Model parameters for matching to SUSY and other ultraviolet completions**

*Wednesday, 22 May 2019 16:20 (20 minutes)*

I will discuss the precision determination of the  $\overline{MS}$  parameters of the Standard Model and their relation to observable quantities such as the top, Higgs, Z, and W pole masses at full 2-loop order with higher-order QCD effects. I describe a new computer program SMDR, which incorporates all of the known higher loop order effects. The program includes, for the first time, the relation of the Higgs squared mass parameter to the vacuum expectation value, defined as the minimum of the Landau gauge effective potential, at full 3-loop order. This program can be used to provide matching boundary conditions for SUSY, or other ultraviolet completions of the Standard Model.

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