Contribution ID: **50** Type: **not specified**

Two loop O(G_F^2 m_t^4) correction to the Higgs decay into bottom quarks

Thursday 27 September 2007 16:30 (30 minutes)

In most of the mass range encompassed by the limits from the direct search and the electroweak precision test, the Higgs boson of the standard model preferably decays to bottom quarks. We calculated, in analytic form, the dominant two-loop electroweak correction, of O(G_F^2 m_t^4), to the partial width of this decay. It amplifies the familiar enhancement due to the O(G_F m_t^2) one-loop correction by about +16% and thus more than compensates the screening by about -8% through strong-interaction effects of O(alpha_s G_F m_t^2). In this talk I will present the results and describe the most important conceptual and technical details.

Based on preprint

Phys. Rev. Lett. 98 (2007) 071602 [hep-ph/0612184]; Nucl. Phys. B 772 (2007) 25 [hep-ph/0702215]

Primary authors: Prof. KNIEHL, Bernd A. (Universität Hamburg); Mr FUGEL, Frank (Universität Hamburg); Mr BUTENSCHÖN, Mathias (Universität Hamburg)

Presenter: Mr BUTENSCHÖN, Mathias (Universität Hamburg)

Session Classification: QCD Phenomenology (continued)