

Status of the 4th SM Family

Saturday 25 June 2011 11:00 (50 minutes)

Existence of the fourth family follows from the basics of the standard model (SM) and the actual mass spectrum of the third family fermions. During the last two decades, the fourth SM family studies were almost blocked by incorrect interpretation of the precision electroweak data. Despite to the studies done 10 years ago this misinterpretation continued to have a place in Particle Data Group (PDG) up to 2008. Lately (in 2010), authors of the corresponding part of PDG have come close to common understanding. While there are some indirect indications (BAU, B-decays), the existence of the fourth SM family should be clarified by direct discovery of the fourth family quarks and leptons. Besides, very important consequence of the fourth SM family is enhancement of the SM Higgs boson production at hadron colliders. We discuss possible manifestations of the fourth SM family at existing and future colliders. The LHC and Tevatron potentials to discover the fourth SM family have been compared.

Primary author: Prof. SULTANSOY, Saleh (TOBB-ETU)

Presenter: Prof. SULTANSOY, Saleh (TOBB-ETU)

Session Classification: Plenary Talks

Track Classification: LHC Physics and Tevatron Results