



Contribution ID: 28

Type: Poster

On the recent anomalies in semileptonic B decays

In the LHC era, the discovery of New Physics signals is the major ambition of the high energy physics community and flavor physics can provide access to new heavy particles (Kaluza—Klein modes, supersymmetric particles ...) in complementary way with respect to direct searches. Signals of possible deviations with respect to the Standard Model (SM) have been recently claimed both by BaBar and LHCb through the analyses of specific semileptonic B meson decays. I'll focus on those decays with a tau lepton in the final state for which new BaBar measurements are available, showing a deviation from the Standard Model at 3.4 sigma level. I study the effects of new operators in the effective weak Hamiltonian on a set of observables, in semileptonic $B \rightarrow D^* (\tau) \mu^+ \mu^-$ modes as well as in semileptonic B and B_s decays to excited charmed mesons (P.Biancofiore, P. Colangelo and F. De Fazio, *Phys. Rev. D* 87, 074010 (2013)). Moreover, I'll discuss the phenomenology of the semileptonic decay $B \rightarrow K \mu^+ \mu^-$, in the framework of a warped extra-dimensional scenario. Since a complete set of form-factor independent observables have been recently measured by the LHCb collaboration, with few sizable deviations with respect to the Standard Models in some of them, it'd be interesting to put constraints on New Physics models from the transition $b \rightarrow s l^+ l^-$ (P.Biancofiore, P. Colangelo and F. De Fazio, arXiv:1403.2944).

Primary author: BIANCOFIORE, Pietro (University of Bari and INFN)

Presenter: BIANCOFIORE, Pietro (University of Bari and INFN)