Contribution ID: **20** Type: **not specified**

Power corrections to semileptonic Penguin decays

Tuesday 27 September 2016 16:10 (35 minutes)

Summary

We discuss the power corrections to the inclusive mode $\bar{B} \to X_s \ell^+ \ell^-$ and to the exclusive mode $B \to K^* \ell^+ \ell^-$ and their role for the so-called LHCb anomalies. In particular, we analyze the factorization to subleading power in the flavor changing neutral current $\bar{B} \to X_s \ell^+ \ell^-$. We compute the so-called resolved contributions. In these contributions the photon couples to light partons instead of connecting directly to the effective weak-interaction vertex. They represent an irreducible uncertainty in the inclusive $\bar{B} \to X_s \ell^+ \ell^-$ decay which cannot be removed by relaxing the experimentally necessary cuts in the hadronic mass spectrum.

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Session Classification: Flavor