Contribution ID: **6** Type: **not specified**

Exploring Hadronic B-decays through SU(3) Flavor Symmetry

Friday, 8 November 2024 12:20 (20 minutes)

The decays of beauty mesons provide interesting opportunities to study CP violation, for which hadronic B-decays are excellent probes. However, the non-perturbative nature of hadronic decays poses significant challenges for theoretical predictions. To address these complexities, we employ SU(3) flavor symmetry, which assumes the quarks up, down and strange are equivalent under the strong interaction. This symmetry enables us to relate decays into mesons composed of these quarks, thereby reducing the number of parameters needed to describe these processes. In this talk, we will first present the predictions derived under full SU(3) flavor symmetry, obtained through a fit to experimental data for various observables. This approach allows us to identify which measurements should be improved, as well as processes that can not be accommodated under the SU(3) symmetry assumption. Finally, we account for factorizable SU(3) flavor symmetry breaking, offering a more realistic and refined analysis of hadronic B-decays.

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Session Classification: Parallel Sessions (I)