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Charmless three-body B-decays: final state interaction and CP violation

Tuesday, 24 March 2015 18:00 (30 minutes)

We will discuss recent results for the formulation of charged three-body B decays in charmless channels, like KKK ,

$\pi\pi$, $KK\pi$, and $\pi\pi\pi$, introducing the final state interaction in the decay amplitude with relation to the CPT constraint, while CP violation is allowed. We consider the s-wave interaction between the mesons, coupling between different decay channels and a resonance. The p-wave interaction in the resonant states, as the formation of the ρ -meson in the $\pi\pi$ channel is considered within the general formulation of the three-body decay channel. In this case the CP violation has contributions from the interference between different mechanisms, like e.g. interference from s and p-wave amplitudes. In particular, we will present preliminary results for the CP asymmetry with dependence on $\cos(\theta)$ in charmless charged channels, as revealed by the recent data from LHCb.

We will also discuss briefly a relativistic three-body formalism for the final state interaction based on the projection of the inhomogeneous Bethe-Salpeter equation onto the light-front with application to the D decay in $K\pi\pi$ channel.

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Session Classification: Strong and electroweak interactions in the standard model

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