



Contribution ID: 116

Type: Oral

CP violation in the charm sector within the Standard Model and beyond

Tuesday, 4 June 2019 14:30 (30 minutes)

In light of the recent LHCb observation of CP violation in the charm sector, we review Standard Model (SM) predictions in the charm sector and in particular for ΔA_{CP} . We get as an upper bound in the SM $|\Delta A_{CP}^{\text{SM}}| \leq 3.6 \times 10^{-4}$, which can be compared to the LHCb measurement of $\Delta A_{CP}^{\text{LHCb-2019}} = (-15.4 \pm 2.9) \times 10^{-4}$. We discuss resolving this tension within an extension of the SM that includes a flavour violating Z' that couples only to $\bar{s}s$ and $\bar{c}u$. We show that for masses below 80 GeV and flavour violating coupling of the order of 10^{-4} , this model can successfully resolve the tension and avoid constraints from dijet searches, $D^0 - \bar{D}^0$ mixing and measurements of the Z width.

Collaboration name

Primary authors: RUSOV, Aleksey (IPPP); LENZ, Alexander (CERN); Dr SCHOLTZ, Jakub (IPPP Durham); Dr CHALA, Mikael (IPPP Durham)

Presenter: RUSOV, Aleksey (IPPP)

Session Classification: Flavor and Precision Physics

Track Classification: Flavor and Precision Physics