

Charm physics prospects at the Belle II experiment

Friday, July 6, 2018 4:50 PM (20 minutes)

The Belle II experiment is a substantial upgrade of the Belle detector and will operate at the SuperKEKB energy-asymmetric e^+e^- collider. The accelerator has already successfully completed the first phase of commissioning in 2016 and first electron positron collisions in Belle II are expected for April 2018. The design luminosity of SuperKEKB is $8 \times 10^{35} \text{ cm}^{-2}\text{s}^{-1}$ and the Belle II experiment aims to record 50 ab^{-1} of data, a factor of 50 more than the Belle experiment. In this presentation, we will discuss the expected sensitivity of Belle II for CPV measurements and New Physics searches in the charm sector. Estimates for several decay channels will be presented, in particular for those with lepton-neutrino, neutral pions and other neutrals in the final state. Alternative flavor-tagging techniques have been developed, a novel flavor-tagging method of prompt D^0 s will be presented. Finally, we will present the impact of the improved tracking at Belle II, that will allow to significantly increase the precision of time-dependent measurements.

Primary authors: PERUZZI, Ida (Laboratori Nazionali di Frascati dell'INFN); Dr ATMACAN, Hulya (University of South Carolina)

Presenter: Dr ATMACAN, Hulya (University of South Carolina)

Session Classification: Quark and Lepton Flavor Physics

Track Classification: Quark and Lepton Flavor Physics