Contribution ID: 24

Semileptonic and leptonic B decay results from early Belle II data

Wednesday, 8 May 2019 14:25 (15 minutes)

The Belle II experiment at the SuperKEKB energy-asymmetric e^+e^- collider is a substantial upgrade of the B factory facility at the Japanese KEK laboratory. The design luminosity of the machine is 8×10^{35} cm⁻²s⁻¹ and the Belle II experiment aims to record 50 ab⁻¹ of data, a factor of 50 more than its predecessor. From February to July 2018, the machine has completed a commissioning run, achieved a peak luminosity of 5.5×10^{33} cm⁻²s⁻¹, and Belle II has recorded a data sample of about 0.5 fb⁻¹. Main operation of SuperKEKB has started in March 2019. In this presentation we show first results from studying missing energy signatures, such as leptonic and semileptonic B meson decays based on early Belle II data. We report first studies on re-measuring important standard candle processes, such as the abundant inclusive $B \to X \ell \nu$ and $B \to D^* \ell \nu$ decays, and evaluate the performance of machine learning based tagging algorithms. Furthermore, we will also present an overview of the semileptonic B decays that will be measured in the upcoming years at Belle II and discuss prospects for important B-anomalies like R(D) and R(D^{*}), as well as other tests of lepton flavor universality.

Email

peruzzi@lnf.infn.it

Primary author: Prof. PERUZZI, Ida Marena (INFN-LNF)

Presenter: Dr PRIM, Markus (Karlsruhe Institute of Technology)

Session Classification: Parallel session 2

Track Classification: Heavy Quark Decays and CKM Metrology