Contribution ID: **134** Type: **Talk**

Measurement of beam polarization at an e^+e^- B-Factory with a new tau polarimetry technique

Wednesday, 19 July 2023 09:00 (15 minutes)

Belle II is considering upgrading SuperKEKB with a polarized electron beam. The introduction of beam polarization to the experiment would significantly expand the physics program of Belle II in the electroweak, dark , and lepton flavor universality sectors. For all of these future measurements a robust method of determining the average beam polarization is required to maximize the level of precision. The $BABAR$ experiment has developed a new beam polarimetry technique, Tau Polarimetry, capable of measuring the average beam polarization to better than half a percent. Tau Polarimetry strongly motivates the addition of beam polarization to SuperKEKB and could also be used at future e^+e^- colliders such as the ILC. We present the performances of this method through an analysis of the full data set of about 470 fb^{-1} collected at the e^+e^- PEP-II collider by the $BABAR$ detector.

Primary authors: EIGEN, Gerald (University of Bergen (NO)); RONEY, Michael

Presenter: EIGEN, Gerald (University of Bergen (NO))

Session Classification: Detectors and facilities

Track Classification: Detectors and facilities