DIRC, the Particle Identification Detector of BaBar

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May 16, 1998

Abstract

A novel Particle Identification Detector has been developed for the BaBar experiment which is foreseen to operate at the PEPII B factory at SLAC. This new and promising PID, called the DIRC (Detection of Internally Reflected Cherenkov light), is a ring–imaging device which utilizes the total internal reflection of light in long thin quartz radiator bars to form a velocity–dependent image. The light is observed by an array of photomultiplier tubes displaced from the end of the bar. After a brief description of the detector, we will present the results of a large scale prototype which was built and tested at CERN using pion, kaon and proton beams. Finally, the status of the project will be presented and its prospects.