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Aerogel Ring Imaging Cherenkov at the Belle II spectrometer

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In the forward end-cap of the Belle II spectrometer, a proximity focusing Ring Imaging Cherenkov counter with an aerogel radiator will be installed. The detector will occupy a limited space inside solenoidal magnet with longitudinal field of 1.5 T. It consists of a double layer aerogel radiator, an expansion volume and a photon detector. 420 Hamamatsu hybrid avalanche photo detectors with 144 channels each will be used to read out single Cherenkov photons with high efficiency. More than 60000 analog signals will be digitized and processed in the front end electronics and send to the unified experiment data acquisition system.

The detector components have been successfully produced and tested and in the first half of 2016 installed in the spectrometer. We expect an excellent performance which will allow at least a 4σ separation of pions from kaons in the experiment kinematic region from 0.5 GeV/c to 4 GeV/c. In the presentation the requirements, the latest design challenges and the current performance will be shown. We will present the first data obtained during the cosmic tests of the final detector.

Registered

Yes

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