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Slow control of the Belle II Aerogel Ring Imaging detector

Since 2018 an aerogel proximity focusing Ring Imaging Detector (ARICH) efficiently separates hadrons in the forward endcap of the Belle II spectrometer. Cherenkov photons emitted in the double layer aerogel radiator are expanded in the 16 cm space and detected on the photon detector comprising 420 Hybrid avalanche photodiodes and backside readout electronics working in a threshold mode. Each of the sensors requires six different high voltages and a supply of four low voltages for the electronics. Due to power dissipation, the system also incorporates a cooling system implemented by circulating cold water through the Al pipes thermally coupled to the readout electronics. The reliable control of the supply voltages and monitoring of the environmental observables and the status of the sensors ensure the stable operation of the ARICH detector and early response to sudden current changes, single events upsets, the overheating, and other faults. In the contribution we will present the slow control system of the ARICH and the data quality monitor used for performance tracking.

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