

The Belle II / SuperKEKB commissioning Time Projection Chambers - characterization, simulation, and results

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Ten 10 cm drift distance Time Projection Chambers (TPCs), filled with He:CO₂:70:30 at slightly above one Atmosphere, equipped with a double GEM and a high resolution pixel readout were built by the University of Hawaii to measure fast neutrons produced by the SuperKEKB beam-induced background during the first and second commissioning phases. We characterized the TPCs with two different sources (Fe55 and Po210) and will discuss a TPC simulation validated by these calibration measurements. Finally, we will present the experimental results of the two TPCs installed during the first commissioning phase and the expected results for the 8 TPCs that will be installed during the second commissioning phase.

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