The Transition Radiation Detector for ALICE at LHC

MinJung Kweon, for the ALICE TRD Collaboration

Physikalisches Institut, Universitaet Heidelberg Heidelberg, 69120, Germany

Contact e-mail: minjung@physi.uni-heidelberg.de

The Transition Radiation Detector (TRD) for the ALICE experiment at the Large Hadron Collider (LHC) identifies electrons and performs online tracking in the challenging high multiplicity environment of heavy-ion collisions within 6 microsecond after the interaction and thus requires excellent position resolution and pion rejection capability. The TRD consists of 540 Xe gas-filled pad readout drift chambers with radiators arranged in 18 super-modules in barrel geometry in the central part of the ALICE detector. The large active area of roughly 700 m² is covered by almost 1.2 million readout channels. Presently, four of in total 18 TRD super-modules are installed in the ALICE central barrel and commissioning of the detector using tracks from cosmic radiation coacting with other ALICE sub-detectors was successfully performed. For a period of six months, four installed super-modules of the detector were commissioned with cosmic radiation including a cosmic trigger generated by the TRD at level 1. We will report on the performance and current understanding of the detector based on these data.