

Abstract Submitted
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The ALICE TPC Upgrad ANDREW CASTRO, University of Tennessee, ALICE-USA COLLABORATION, ALICE-TPC COLLABORATION — The Time Projection Chamber (TPC) currently used for ALICE (A Large Ion Collider Experiment at CERN) is a gaseous tracking detector used to study both proton-proton and heavy-ion collisions at the Large Hadron Collider (LHC) In order to accommodate the higher luminosity collisions planned for the LHC Run-3 starting in 2021, the ALICE-TPC will undergo a major upgrade during the next LHC shut down. The TPC is limited to a read out of 1000 Hz in minimum bias events due to the intrinsic dead time associated with back ion flow in the multi wire proportional chambers (MWPC) in the TPC. The TPC upgrade will handle the increase in event readout to 50 kHz for heavy ion minimum bias triggered events expected with the Run-3 luminosity by switching the MWPCs to a stack of four Gaseous Electron Multiplier (GEM) foils. The GEM layers will combine different hole pitches to reduce the dead time while maintaining the current spatial and energy resolution of the existing TPC. Undertaking the upgrade of the TPC represents a massive endeavor in terms of design, production, construction, quality assurance, and installation, thus the upgrade is coordinated over a number of institutes worldwide. The talk will go over the physics motivation for the upgrade, the ALICE-USA contribution to the construction of Inner Read Out Chambers IROCs, and QA from the first chambers built in the U.S

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