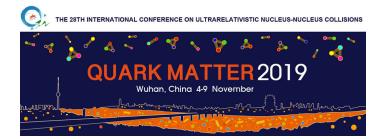
Quark Matter 2019 - the XXVIIIth International Conference on Ultra-relativistic Nucleus-Nucleus Collisions



Contribution ID: 608

Type: Poster Presentation

Readout electronics for the sPHENIX Time Projection Chamber

Monday 4 November 2019 17:40 (20 minutes)

One of the major physics goals of the sPHENIX experiment at RHIC is to major the Upsilon states with 100MeV mass resolution. In order to achieve this resolution, a Time Projection Chamber (TPC) was proposed for momentum measurements of electrons and hadrons. The TPC does not have a gating grid similarly to the ALICE TPC case and therefore capable for handing the collision rate of up to a few hundreds KHz. In turn, the charge has to be readout continuously. The readout electronics was newly designed to meet this requirement. The signal is readout by 624 Frontend cards that have 8 SAMPA v5 chips, the new version of the one employed for ALICE TPC, and sent to a backend electronics, FELIX PCI card, designed for ATLAS experiment. The data rate from the whole TPC may reach as much as 1.4Tbps. We will show the readout scheme for the TPC and the performance from the prototype boards as well as the data reduction scheme.

Author: SPHENIX COLLABORATION
Presenter: SPHENIX COLLABORATION

Session Classification: Poster Session

Track Classification: Future facilities and instrumentation