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sPHENIX TPC simulation studies

Thursday, 25 May 2017 14:50 (4 minutes)

Proposed upgrade of PHENIX to sPHENIX at RHIC is focused on measuring jets, jet correlations and three states of upsilons to determine the temperature dependence of transport coefficients of the quark-gluon plasma and complementing measurements being made at LHC. The sPHENIX detector will have GEM based Time Projection Chamber (TPC) as an outer tracking detector with a length of 211 cm and outer radius of 78 cm spanning phase space of full azimuth and 2.2 units in pseudo rapidity. Space charge due to the accumulation of less mobile positive ions within TPC volume is considered one of the important factor determining the performance of GEM-based TPC in Heavy Ion collision environment. Also, selection of suitable gas mixture is important to achieve high mobility of ionized electrons and ions within TPC gas volume. This poster is intended to present the simulation of the effect of space charge and diffusion coefficients of different gas mixtures in TPC on tracking performance.

Primary authors: TARAFDAR, Sourav (Vanderbilt University); SPHENIX COLLABORATION

Presenter: TARAFDAR, Sourav (Vanderbilt University)

Session Classification: Coffee Break and Poster Session - 2