



Contribution ID: 507

Type: Poster

## Collision event plane determination in sPHENIX at RHIC

*Tuesday 5 September 2023 17:30 (2h 10m)*

Many physics observables of interest in heavy-ion collisions require knowledge of the collision geometry. Geometric fluctuations lead to different symmetry planes of the initial geometry for each harmonic number, called participant planes. As the produced medium evolves, pressure gradients transform the initial state spatial anisotropy into final state momentum anisotropy. The angular distribution of particles can be described via Fourier coefficients  $v_n$ . The participant planes can be approximated via event planes,  $\psi_n$ , which are determined from measured azimuthal distribution of particles produced in the collision. This poster reports the methods used for event plane determination in sPHENIX as well as the performance using a variety of sPHENIX subsystems based on simulation using a realistic GEANT description of the experiment. Initial results from the first data run will also be discussed.

### Category

Experiment

### Collaboration (if applicable)

**Primary author:** UMAKA, Ejiro Naomi (Brookhaven National Laboratory (US))

**Presenter:** UMAKA, Ejiro Naomi (Brookhaven National Laboratory (US))

**Session Classification:** Poster Session

**Track Classification:** Collective Dynamics