



Contribution ID: 81

Type: not specified

## Bulk and Shear Viscosity Effects in Event-by-Event Relativistic Hydrodynamics

*Friday 13 September 2013 17:40 (20 minutes)*

Bulk and shear viscosity effects on the collective flow harmonics in heavy ion collisions are investigated, on an event by event basis, using a newly developed 2+1 Lagrangian hydrodynamic code named v-USPhydro which implements the Smoothed Particle Hydrodynamics (SPH) algorithm for viscous hydrodynamics. Bulk viscosity is shown to enhance the collective flow Fourier coefficients from  $v_2(pT)$  to  $v_5(pT)$  when  $pT \sim 1-3$  GeV even when the bulk viscosity to entropy density ratio,  $\zeta/s$ , is significantly smaller than  $1/(4\pi)$  while shear viscosity has an opposite effect.

### Summary

Part of the presentation is based on arXiv:1305.1981

**Primary author:** NORONHA-HOSTLER, Jacquelyn (U)

**Co-authors:** GRASSI, Frederique; DENICOL, Gabriel (Frankfurt University); NORONHA, Jorge (U); ANDRADE, Rone (Universidade de São Paulo USP)

**Presenter:** GRASSI, Frederique

**Session Classification:** Parallel talks - Session 4A