

# Jet quenching effects on the elliptic and triangular flow at RHIC

*Thursday, 7 November 2013 14:30 (20 minutes)*

In this work we investigate how the energy and momentum lost by partonic jets in the quark-gluon plasma may affect the final elliptic and triangular flow of low  $p_T$  hadrons at RHIC energies. The jets are modeled as external sources in the energy-momentum conservation equations of ideal hydrodynamics, which are solved on an event by event basis. We find that the average integrated elliptic (triangular) flow and the participant eccentricity (triangularity) can become significantly less linearly correlated if the energy loss rate is sufficiently large ( $dE/dx > 10$  GeV/fm). We show that the linear correlation between  $v_3(p_T < 1$  GeV) and  $v_3(2 < p_T < 3$  GeV) is particularly sensitive to the magnitude of  $dE/dx$  and, thus, this new observable may be used to distinguish between strong and weak coupling scenarios for the jet energy loss in the QGP.

## Keywords

Heavy Ion Collisions, hydrodynamics, jet quenching, flow Fourier harmonics, initial eccentricity.

**Primary author:** Dr ANDRADE, Rone (Universidade de São Paulo)

**Co-authors:** Dr DENICOL, Gabriel (McGill University); Prof. NORONHA, Jorge (Universidade de São Paulo)

**Presenter:** Dr ANDRADE, Rone (Universidade de São Paulo)

**Session Classification:** Jet Quenching and Observables

**Track Classification:** Initial State and Proton-Nucleus Collision Phenomena