QUARK MATTER 2015
Sep. 27 – Oct. 3, 2015 Kobe, Japan

Contribution ID: **502** Type: **Contributed talk**

Measurement of the correlation between flow harmonics of different order in lead-lead collisions at sqrt(sNN)=2.76 TeV with ATLAS

Monday 28 September 2015 15:10 (20 minutes)

ATLAS measurements of correlations between elliptic or triangular flow, vm (m=2,3), and other flow harmonics vn (n=2–5), in Pb+Pb collisions at sqrt(sNN)=2.76 TeV are presented. The vm-vn correlations are measured as a function of centrality, and as a function of varying event-geometry but fixed centrality using the "event-shape" selection technique. The measurements show that the effects of viscosity in heavy-ion collisions depend only on the collision centrality and not on the collision geometry. These measurements comprehensively demonstrate that a significant fraction of the higher order flow (n>3), is in fact generated from the hydrodynamic response to lower order eccentricities. The separation of the higher order flow harmonics into linear and non-linear components that are directly related to the same- and lower-order eccentricity of the initial geometry is done and their centrality dependence is measured. Comparisons to previous event-plane correlations that probe the non-linear hydrodynamic response are also presented.

On behalf of collaboration:

ATLAS

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Session Classification: Correlations and Fluctuations I

Track Classification: Correlations and Fluctuations