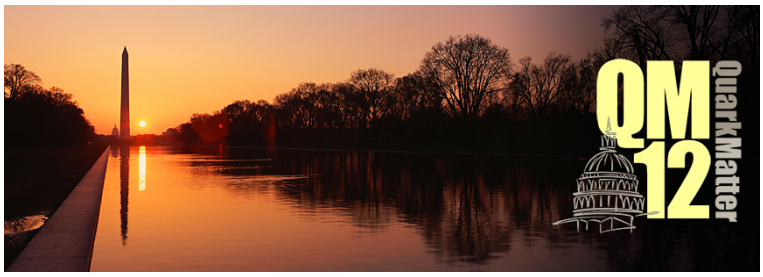

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Neutral meson flow in Pb-Pb collisions at the LHC with the ALICE EMCal

Thursday, August 16, 2012 4:00 PM (2 hours)

A central goal of the heavy-ion program at LHC is to study the properties of the quark-gluon plasma (QGP). The azimuthal anisotropy of particle production is a sensitive tool to study the features of the QGP. The anisotropy is typically characterized by v_2, the second harmonic coefficient of the Fourier series expansion of the particle azimuthal distribution with respect to the reaction plane. The observed v_2 is believed to be sensitive to different particle production mechanisms. At low transverse momentum ($p_{\rm t}$) v_2 encodes the information of the expansion driven by the initial pressure gradients. At high $p_{\rm t}$ it may be caused by path-length dependent parton energy loss. At intermediate $p_{\rm t}$ it may be related to the mechanism of quark coalescence.

In this poster, we present the v_2 measurements of π^0 and η mesons using data from the 2011 heavy-ion run at the LHC. The neutral mesons are reconstructed using the ALICE Electromagnetic Calorimeter (EMCal), while the event plane is determined by the V0 detector. The measured v_2 is reported as a function of the transverse momentum for different centrality selections. In order to study the systematic uncertainty, the v_2 coefficient has been extracted using both the $dN/dvarphi$ method and invariant mass method. The determination of the event plane using different subdetectors in ALICE, as well as their resolution, are also explored and discussed.

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