Contribution ID: **26** Type: **Experimental**

Charge dependence of identified two-hadron correlation relative to the reaction plane in Pb-Pb collisions measured with ALICE

Thursday 25 September 2014 10:55 (20 minutes)

Recently a non-zero charge dependence of two-particle correlation relative to the reaction plane in relativistic heavy-ion collisions was observed by RHIC and LHC experiments. The interpretation of these results is a hot topic of debate in the heavy-ion community because of its possible implication for our understanding of parity violation in strong interactions. We extend the ALICE measurement of the charge dependent two-particle correlations in Pb-Pb collisions at $\sqrt{s_{NN}} = 2.76$ TeV with one identified hadron (pion, kaon, or proton). Correlations are reported as a function of the identified hadron transverse momentum. These new results are important for disentangling contributions from a number of competing physics effects, such as local charge conservation coupled with strong anisotropic flow, flow fluctuations, and possible contribution from parity violation coupled with strong magnetic fields, the so-called chiral magnetic effect.

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Session Classification: Session 7

Track Classification: Correlations and fluctuations