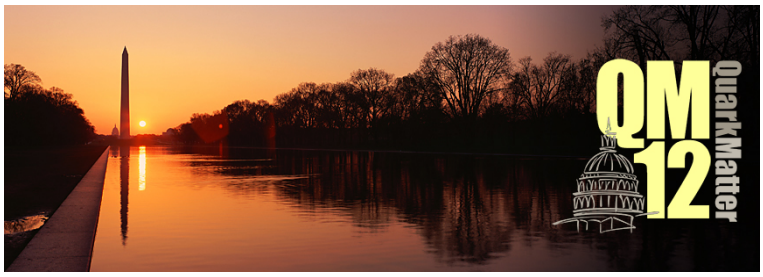

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Identical kaon femtoscopic correlations in proton-proton and heavy-ion collisions at the LHC

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

Femtoscopic correlations allow one to measure the space-time characteristics of particle production thanks to the effects of quantum statistics for identical particles and final state interactions for both identical and non-identical particles. The main features of the femtoscopy measurements in heavy-ion collisions from SPS to RHIC and LHC are i) the increase of the correlation radii with increasing multiplicity of events and ii) the decrease of the radii with increasing pair transverse momentum/transverse mass. These are understood as a manifestation of strong collective flow.
We report the measurement of correlations of two identical kaons (neutral and charged) in pp and Pb-Pb collisions by the ALICE experiment at the Large Hadron Collider (LHC). The increase of correlation radii for increasing multiplicity was observed both in Pb-Pb and pp collisions. The decrease of kaon radii for increasing transverse momentum was observed in Pb-Pb collisions. Similar behaviour of the radii was observed at high multiplicities in pp collisions. However at low multiplicity the behaviour of the radii is completely different. This observation may indicate a similarity between high multiplicity pp collisions and heavy ion collisions.

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