

1 **Femtoscopic studies of identical pions in Au+Au collisions at $\sqrt{s_{NN}} = 27$**
2 **GeV with STAR at RHIC**

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5 Femtoscopic studies provide a direct tool to measure the source dimension using particle correla-
6 tions in momentum space. Directed flow (v_1) measurements at RHIC-STAR experiment show that v_1
7 changes sign with pseudorapidity and becomes zero three times around mid, forward and backward
8 rapidities which can't be explained by hydrodynamic models. v_1 signal can be generated from the
9 "tilted source" initial conditions. Femtoscopic studies with respect to the first order event plane can
10 give the information about tilt angle which is expected to decrease with increasing collision energy.
11 In this work, two-particle femtoscopic correlations between identical charged pions are measured
12 in Au+Au collisions at $\sqrt{s_{NN}} = 27$ GeV with STAR at RHIC. The three-dimensional two-particle
13 correlation functions in the out-side-long LCMS frame are studied in different centrality bins as a
14 function of pair azimuthal angle relative to the first order event plane angle. The three dimensional
15 femtoscopic source size parameters as well as oscillation parameters are extracted and tilt angle
16 of the fireball is calculated. In this presentation, we present the current status of different source
17 parameter extraction and calculation of tilt angle of the fireball produced in Au+Au collisions at
18 $\sqrt{s_{NN}} = 27$ GeV at RHIC-STAR experiment.