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## Elliptic flow of $\phi$ mesons in Au + Au collisions at $E_{lab} = 35$ A GeV using PHSD model

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Hot and dense matter created in relativistic heavy-ion collisions exhibits collective behaviour due to multi-particle interactions among the constituents of the matter.

Elliptic flow (the second harmonic coefficient of the Fourier decomposition of the azimuthal angle distribution of particles) is one of the observables to measure the collective behavior in the early stages of heavy-ion collisions. The  $\phi$  meson, which is the bound state of strange (s) and antistrange ( $\bar{s}$ ) quark, have a low hadronic interaction cross-section as compared to other light hadrons. Due to the small hadronic interaction cross-section, the elliptic flow ( $v_2$ ) of  $\phi$  mesons act as an important tool to probe the system created in relativistic heavy-ion collisions.

We have extracted the  $\phi$  mesons from  $K^+K^-$  decay channel in Au + Au collisions generated from Parton Hadron String Dynamics (PHSD) transport model. We have used 30 million events from the PHSD model. We will present  $v_2$  of  $\phi$  mesons as a function of transverse momentum ( $p_T$ ) and rapidity ( $y$ ) in Au+Au collisions at  $E_{lab} = 35$  A GeV. We will also present collision centrality dependence of  $\phi$  mesons  $v_2$  and show comparison to the published experimental results.

### Session

Heavy Ions and QCD

**Primary author:** Mr BHAT, Waseem Ahmad (Department of Physics, University of Kashmir, Srinagar-190006, India.)

**Co-authors:** Prof. MIR, M. Farooq (Department of Physics, University of Kashmir, Srinagar-190006, India.); Dr BHAT, Shabir Ahmad (Department of Physics, University of Kashmir, Srinagar-190006, India.); Prof. KABANA, Sonia (Instituto de Alta Investigación, Universidad de Tarapacá, Arica 1000000, Chile); Mr BHAT, Towseef Ahmad (Department of Physics, University of Kashmir, Srinagar-190006, India.); Mr BAIRATHI, Vipul (Instituto de Alta Investigación, Universidad de Tarapacá, Arica 1000000, Chile)

**Presenter:** Mr BHAT, Waseem Ahmad (Department of Physics, University of Kashmir, Srinagar-190006, India.)

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