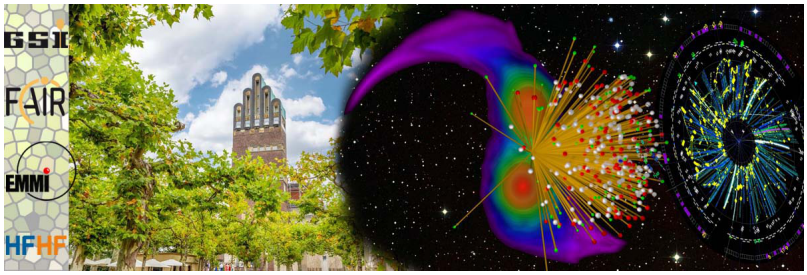

Contribution ID: **59** Type: **Oral**

Directed and elliptic flow observations in Sn+Sn collisions with radioactive beams at 270 MeV/u

Monday, 18 September 2023 12:30 (30 minutes)

Rapidity dependence of directed flow (v_1) and elliptic flow (v_2) were analyzed for various particles, including proton, deuteron, triton, ^{3}He, and ^{4}He observed in collisions involving $^{132}\mathrm{Sn} + ^{124}\mathrm{Sn}$ and $^{108}\mathrm{Sn} + ^{112}\mathrm{Sn}$ collisions at 270 $\mathrm{MeV/u}$.
The flow was larger for heavier charged particles, i.e.,
the slope of v_1 (v_{11}) and the negative v_2 at the mid-rapidity (v_{20}) were enhanced for the heavier charged particles.
To understand the experimental data, we compared them with AMD calculations which explicitly consider the cluster correlation.
Two types of momentum-dependent mean field potential were utilized.
AMD calculations explain the increasing flow trend for the heavier particles, but a close comparison shows that the mass dependence is stronger in experimental data.
The sensitivity to the density dependence of the symmetry energy and
the system dependence is also examined.

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Session Classification: Constraints from heavy-ion collisions at relativistic energies

Track Classification: Constraints from heavy-ion collisions at relativistic energies