

Investigation of the Symmetry Energy from measurements of Transverse Collective Flow

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The transverse flow of intermediate mass fragments (IMFs) has been investigated for the 35 MeV/u $70\text{Zn}+70\text{Zn}$, $64\text{Zn}+64\text{Zn}$, and $64\text{Ni}+64\text{Ni}$ systems. A transition from the IMF transverse flow strongly depending on the mass of the system, in the most violent collisions, to a dependence on the charge of the system, for the peripheral reactions, is shown. This demonstrates the importance of both mass and charge dependent forces in the transverse flow. The antisymmetrized molecular dynamics model was used to investigate the sensitivity of the IMF transverse flow to the density dependence of the symmetry energy. The best agreement between the experiment and theory was achieved with a stiff density dependence of the symmetry energy.