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The equation of state of symmetric nuclear matter from heavy-ion collisions

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Constraining the equation of state (EOS) of dense symmetric nuclear matter has been the goal of numerous experimental heavy-ion efforts worldwide, including the early experiments at the AGS and SPS, the currently ongoing efforts such as the Beam Energy Scan program at RHIC and the HADES experiment at GSI, and future experiments such as the Compressed Baryonic Matter experiment at FAIR. Beyond being interesting on its own, constraints on the symmetric nuclear matter EOS can provide an important baseline for studies of the nuclear symmetry energy, whether using state-of-the-art experiments at rare isotope beam facilities or based on observations of neutron stars and neutron star mergers. In this talk, I will discuss recent theoretical developments in constraining the dense symmetric nuclear matter EOS from comparisons of heavy-ion collision simulations to experimental data. I will also highlight the necessary steps needed for a robust extraction of the EOS from the available and upcoming experimental results.

Primary author: SORENSEN, Agnieszka (University of Washington)

Presenter: SORENSEN, Agnieszka (University of Washington)

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