Contribution ID: **117**   Type: **Oral**

Simulating stochastic diffusion in critical and near-critical fluids in (3+1) dimensions

We describe numerical simulations of stochastic fluid dynamics with a conserved charge coupled to the momentum density of the fluid. This theory is known as model H, and it is expected to describe universal dynamics in the vicinity of a possible critical endpoint in the QCD phase diagram. We verify dynamical scaling, and compute the scaling exponent and the renormalized viscosity. We also describe exploratory simulations that include a relativistic background fluid.

Category

Theory

Collaboration (if applicable)

Primary author: SCHAEFER, Thomas

Co-authors: CHATTOPADHYAY, Chandrodoy (North Carolina State University); OTT, Josh (North Carolina State University); SKOKOV, Vladimir

Presenter: SCHAEFER, Thomas

Track Classification: QCD phase diagram & critical point