Contribution ID: **231**   Type: **Invited/Solicited talk in mini-symposium**

Reconstructing the formation history of the observed universe

Monday, 11 December 2023 15:50 (20 minutes)

ELUCID is a method to reconstruct the initial linear density field from an input nonlinear density field, employing the Hamiltonian Markov Chain Monte Carlo (HMC) algorithm combined with Particle-mesh (PM) dynamics.
My talk will describe its application and the constrained N-body and gas simulations in the SDSS volume. I will
show how to use the reconstruction to understand galaxies and gas in the cosmic web, as well as the underlying physics.

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Presenter: MO, Houjun (University of Massachusetts)

Session Classification: Cosmology with large-scale structure