

## **Cosmological initial data for numerical relativity**

David Garfinkle, Oakland University

We find initial data for numerical relativity simulations of inhomogeneous cosmologies. This involves treating an exceptional case of the general relativity constraint equations. We devise analytic and numerical methods to treat this exceptional case. We apply the analytic method to the standard case of cosmology with a single scalar field. The numerical method is applied to the two-field ekpyrotic cosmology.