

Abstract Submitted
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Inhomogeneities in an expanding universe: the nonlinear and relativistic regimes WILLIAM EAST, Perimeter Institute — I will discuss the dynamics, and observational consequences of inhomogeneities in an expanding universe. In particular, I will concentrate on how the tools of numerical relativity can be used to study this problem in a fully general-relativistic setting, where traditionally employed approximations may break down. I will show how this can be used to explore and quantify the cosmological regime where the evolution of the inhomogeneities becomes nonlinear, and where relativistic effects may become important. This includes applications to primordial black hole formation, as well as other settings in the early universe where strong-field gravity plays a role.

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