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A dynamic model of spherical perturbations in the Friedmann universe. I

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Abstract

A self-consistent set of equations describing the evolution of linear spherically symmetrical perturbations in the Friedmann world is derived for an arbitrary equation of state. A singular part of perturbations corresponding to a massive particle-like source is separated, an evolution equation for calculating the source mass is obtained and solved exactly. An exact solution to evolution equations for perturbations at an arbitrary equation of state is constructed. © 2008 Springer Science+Business Media, Inc.

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