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## Generalized Relativistic Zel'dovich Approximation: A new method for structure formation

We present a new general relativistic method to model the large-scale structure formation in the universe. This method is developed as a simultaneous generalization of the Relativistic Zel'dovich Approximation and Szekeres/LTB exact solutions. The overall approach consists of a deformation field evolving on an inhomogeneous Friedmann-like reference model. As in the original Zel'dovich approach, the dynamics can be interpreted as an extrapolation of the locally one-dimensional exact solution (in terms of the deformation) onto three dimensions. Results of some numerical examples are also shown to illustrate the potential and capability of the approach.

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