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Averaging of disturbed Friedmann–Lemaitre cosmological model

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We examine a naive perturbative generalization of the Friedmann–Lemaitre cosmological model. We introduce at the metric level parameters which control basic properties of inhomogeneities, their profile, growth rate and density contrast. We give conditions under which the model can be considered reasonable and comment limitations of this approach. Finally, we perform an averaging procedure of the model using the notion of weak limit and propose a method to construct its background model.

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