

In this work we have examined different methods of averaging in general relativity and cosmology. We developed the method based on Cartan scalars. We computed the backreaction term for a flat LTB model with a special ansatz for the radial function. We found out that it behaves as a positive cosmological constant. In the next part of this thesis we were interested in averaging inside LRS class II dust model. For this family we averaged all the Einstein equations and the resulting system generalizes the Buchert equations. We numerically worked out two concrete examples where deceleration parameter changes its sign from positive to negative.