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Dark Energy and Inhomogeneity

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Most aspects of structure formation in the late universe are treated using Newtonian gravity, either using perturbation theory or N-body simulations. General relativistic corrections to this picture are generally assumed to be 'small'. Surprisingly, not a lot is known about them however, which has led to some speculation that dark energy may in fact be relativistic aspects of structure formation in disguise. While this idea seems implausible to many, it does appear that relativistic corrections to the standard model come in at the percent level or larger. This will be important for precision cosmology and our interpretation of dark energy.