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Large-scale structures in some modified-gravity scenarios

Wednesday 16 April 2014 16:00 (20 minutes)

We study the effects of screened modified gravity of the $f(R)$, dilaton and symmetron types on structure formation, from the quasi-linear to the non-linear regime, using semi-analytical methods. For such models, where the range of the new scalar field is typically within the Mpc range and below in the cosmological context, non-linear techniques are required to understand the deviations of the power spectrum of the matter density contrast compared to the Λ -CDM template. This is nowadays commonly tackled using extensive N-body simulations. Here we present results combining exact perturbation theory at the one loop level (and a partial resummation of the perturbative series) with a halo model.

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