

MGPT: A code for perturbation theory in modified gravity

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Abstract

In this work we present a new code to study perturbation theory in modified gravity. The code is based on the computation of the Lagrangian Perturbation Theory (LPT) kernels. From these kernel functions we can compute the correlation function in Convolution-LPT (CLPT) and the power spectrum in Standard Perturbation Theory (SPT). We applied the code to compute the correlation function in CLPT and the power spectrum in SPT for  $\Lambda$ CDM,  $f(R)$  Hu-Sawicky and DGP braneworld models. We have made public the code to compute these statistics.