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The e-MANTIS emulator: fast predictions for the non-linear structure formation in modified gravity

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In order to probe modifications of gravity at cosmological scales, accurate theoretical predictions are required. N-body simulations are needed to explore the non-linear regime of structure formation, but are very time consuming. This talk presents an emulator, dubbed e-MANTIS, that performs an accurate and fast interpolation between the predictions of a given set of cosmological simulations in f(R) modified gravity. We compute the matter power spectrum boost due to f(R) gravity B(k) = P_f(R) / P_LCDM and build an emulator using a Gaussian Process Regression method. Such an emulator could be used to constrain f(R) gravity with weak lensing analyses.

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