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Resolution test for modified gravity models

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We study the reliability of the MG-PICOLA code through resolution tests, where we vary the numerical parameters in the cosmological simulations. We do the analysis with three modified gravity models: Hu-Sawicki $f(R)$, nDGP (the normal branch of the Dvali, Gabadadze, and Porrati model), and the Symmetron. For the DGP model we compare our results with those of the MG-GLAM code. We found that MG-PICOLA simulations are suitable for the rapid exploration of MG models, since it achieves reliable results on moderately large values of numerical parameters, but with short execution times. We use these results to search for differences between the mass power spectrum of the MG models and that of the standard gravity GR.

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