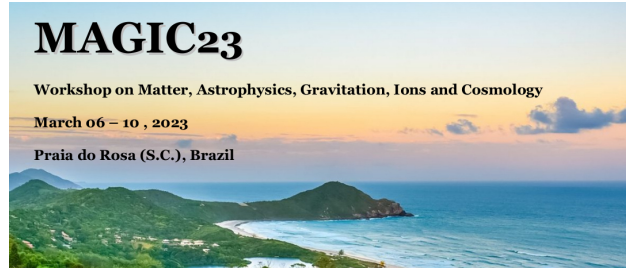


# MAGIC23 Workshop (Matter, Astrophysics, Gravitation, Ions and Cosmology)



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## Resolution tests for modified gravity models

In this work we analyze the formation of the cosmological structure in different models of modified gravity: the symmetron model, which is characterized by a scalar field that decouples from matter in regions of high density due to a symmetry breaking potential; an  $f(R)$  model, which proposes a generalization of the Einstein Hilbert action substituting the Ricci scalar for a function of it; and the DGP model, one of the simplest braneworld models representative of high-dimensional cosmological models. The analysis is carried out through cosmological simulations obtained with the MG-PICOLA code , for which we perform resolution tests in search of the optimal combination of parameters for the analysis of the effect of each model on structure formation. Subsequently, from the mass power spectrum, we find specific behaviors of the models and differences with respect to the standard cosmological model  $\Lambda$ CDM.

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