

Fast simulations of dark matter structure formation with modified gravity and massive neutrinos.

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I will briefly introduce the need for fast, approximate tools for cosmological simulations of dark matter structure formation, before talking about how we have implemented both modified gravity and massive neutrinos into the fast, approximate simulation tool COLA.

I will present results produced by this extended version of COLA and explain how a potential degeneracy between the enhancement of structure formation due to modified gravity and suppression of structure formation due to massive neutrinos can make it difficult to distinguish between Λ CDM and modified gravity in observables such as the matter power spectrum.

Primary author: Mr WRIGHT, Bill (Institute of Cosmology and Gravitation, University of Portsmouth)

Presenter: Mr WRIGHT, Bill (Institute of Cosmology and Gravitation, University of Portsmouth)