Contribution ID: **25** Type: **not specified**

Radiatively generated symmetron mechanism in curved spacetime

Thursday 17 July 2025 11:55 (20 minutes)

Content Scalar-tensor theories of gravity are a class of modified gravity models that extend general relativity by introducing a scalar field coupling to curvature terms in the action. These theories aim to address fundamental problems in cosmology, such as explaining the nature of dark matter and the origin of the Universe's accelerated expansion. The models have been thoroughly tested, and a significant portion of their parameter space has been excluded by observations. In order to avoid these constraints, a screening mechanism can be introduced to the theory that hides the fifth force from detection. In this talk, I will present ongoing work on the extension of the radiatively generated symmetron-like screening mechanism [1] to the curved spacetime. I will discuss the importance of the corrections due to the spacetime's curvature and their consequences for mapping back the observational constraints to the model's parameter space

Presenter: BUNIO, Lukasz (University of Manchester)

Session Classification: Student Talks