

Master2 Internship proposal at CPT, year 2019

Research team:

Cosmology

Supervisor:

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Project title:

Effective field theory of vector dark energy

Description:

We will extend the formalism of the effective field theory of a cosmological scalar (EFT of inflation or EFT of dark energy) to a vector field. The idea is to write down the most general Lagrangian of vector field perturbations that is compatible with *i*) the Lorentz invariance of the original covariant action, *ii*) the unbroken spacetime symmetries of a cosmological background after the scalar field has acquired a Lorentz breaking expectation value: spatial translations and rotations.

References

- [1] F. Piazza and F. Vernizzi, “Effective Field Theory of Cosmological Perturbations,” *Class. Quant. Grav.* **30**, 214007 (2013) [arXiv:1307.4350 [hep-th]].