



Contribution ID: 56

Type: Poster

## Dark sector evolution in Horndeski models

Despite the good agreement between theoretical predictions and observational results, the cosmological constant is not a satisfactory explanation for the accelerated expansion of the universe. Hence an intense theoretical effort has been devoted to the study of models beyond General Relativity plus a cosmological constant.

In this talk, I will present ongoing work on the study of the properties of the dark sector to describe Horndeski models in terms of a non-trivial fluid within the Equation of State formalism. I will apply the framework to derive approximate expressions which give a simple physical intuition of the problem at hand and to understand theoretically modified gravity parameters and effects on observables.

I will show how under certain approximations, the Equation of State formalism naturally leads to the definition of phenomenologically modified gravity functions such as effective gravitational constant  $G_{\text{eff}}$  and the slip  $\eta$ . These new expressions will be linked to results from other perturbative approaches used in the literature.

The work here presented is discussed in the following work “Dark sector evolution in Horndeski models”, with reference number arXiv:1905.06795

**Primary author:** PACE, Francesco (University of Manchester)

**Session Classification:** Parallel Sessions: Modified Gravity and Dark Energy (C.A.R.L., H03)

**Track Classification:** Modified Gravity and Dark Energy