

Ateliers de l'action Dark Energy

Friday, October 15, 2021 - Friday, October 15, 2021

Book of Abstracts

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Gravité Modifiée

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Euclid Forecasts on Neutrino Mass through Fisher Matrix

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In order to prepare a new mission, forecasts are a must. This work builds on a previously made program called TotallySAF designed to produce forecasts for Euclid on a certain number of classic cosmological parameters, through Fisher matrixes. The novelty of this work resides in the addition of a new free cosmological parameter, the neutrino density, directly related to the neutrino mass. Normal order of mass hierarchy is tested, and constraints of around ~ 25 meV are found for the neutrino mass. Numerous problems on the derivation of the Likelihood are also explored, mainly its stability in regards to the derivative step, as they are directly involved with the computations of the Fisher Matrixes elements.

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Obs: Modified gravity constraints from galaxy surveys and future challenge

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Sim: Building a matter power spectrum emulator from N-body simulations in $f(R)$ CDM cosmology

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Th: Screening mechanisms (K-mouflage, ...)

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Discussion : Is it possible to parametrize modified gravity in the non-linear regime of structure formation?

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Possible idea: Systematic simulations of modified gravity beyond Chameleon models ?
Other idea?

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Discussion 2 : Is it possible to parametrize modified gravity in the non-linear regime of structure formation?

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