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Seminar of the theory group of APC

Mardi 28 Fevrier 2017, 14 :00
APC, 483 A - Malevitch
Domaines : hep-th

Titre : *Recent results about vector- and multi-Galileon theories*

Orateur : **Erwan Allys (IAP)**

Résumé : *Galileon models follow the Horndeski systematic construction to couple additional fields to gravity in order to modify the Einstein equations. There were first investigated from 2009 in the case of a single scalar field. Thus, there have been an increasing interest in similar models involving either a vector field or several scalar or vector fields. During this talk, I will present results from these different topics. After a review of the scalar Galileon case, I will present the vector Galileon model that is now complete, making explicit its construction and properties, as well as its coupling to gravity. We will then discuss the construction of multi-fields vector Galileon models, and present a systematic investigation method performed in order to obtain all the possible terms at a given order. I will finally examine more in-depth the construction of scalar multi-Galileon theories, and introduce in a natural way a new class of terms. This new class explains the discrepancies between the previous formulation of multi-Galileon and recent papers finding additional terms. This will allow us to describe what could be the most general theory for scalar multi-Galileons.*