

De *Madrid* al *Cosmos*

What model-independent reconstruction techniques really say about extended theories of gravity

Álvaro de la Cruz-Dombriz

University of Cape Town & National
Institute for Theoretical Physics (NITheP)

Abstract: Model independent techniques are crucial to test both the present Λ CDM cosmological paradigm and alternative theories making the least possible number of assumptions about the Universe. Whether cosmography is able to distinguish between different gravitational theories or not has remained so far an open question. I will present the bounds on model parameters for three different extensions of General Relativity, namely quintessence, F(Torsion) and f(R) theories. Using extensive data from the Union2.1 SN catalogue, BAO data and $H(z)$ differential age compilations, and through a Monte Carlo analysis using a Metropolis-Hastings algorithm with a Gelman-Rubin convergence criterion this technique is shown to be capable of providing 1- σ and 2- σ constraints. I shall compare these results to the truncated Λ CDM paradigm, showing that the permitted regions of coefficients are significantly modified and in general widened compared to values reported in the existing literature. Finally Bayesian selection criteria AIC and BIC will provide further insight on the limitations of the method.

Jueves 10 de noviembre, 16:00 h.
Sala de Juntas
CFMAC-CSIC (Serrano, 113 Bis)

Ciclo de seminarios organizado conjuntamente por los grupos

- *Teorías Efectivas en Física Moderna* (UCM)
- *Gravitación y Cosmología* (IEM-CSIC)

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