

SEMINARIO
Departamentos de Física Teórica I y II
Universidad Complutense de Madrid

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TITULO: Graviton self-interactions and the cosmological constant

LUGAR: FACULTAD DE CIENCIAS FÍSICAS UCM

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ABSTRACT

It is commonly accepted that general relativity is the only solution to the consistency problem that appears when trying to build a theory of self-interacting gravitons (massless spin-2 particles). Padmanabhan's 2008 thought-provoking analysis raised some concerns that are having resonance in the community. In this talk we develop the self-coupling problem in detail from first principles and solve the infinite-iterations scheme associated with it. We conclude that as long as one requires the (deformed) preservation of gauge invariance, one naturally recovers the field equations of general relativity with a peculiarity: it is not compulsory that vacuum zero-point energies gravitate. In collaboration with Carlos Barceló (IAA-CSIC) and Luis J. Garay (FTII-UCM, IEM-CSIC).