



ΚΟΙΝΟ ΣΕΜΙΝΑΡΙΟ ΚΕΝΤΡΟΥ ΚΒΑΝΤΙΚΗΣ ΠΟΛΥΠΛΟΚΟΤΗΤΑΣ ΚΑΙ
ΝΑΝΟΤΕΧΝΟΛΟΓΙΑΣ & ΚΕΝΤΡΟΥ ΘΕΩΡΗΤΙΚΗΣ ΦΥΣΙΚΗΣ ΚΡΗΤΗΣ /
JOINT CCQCN -CCTP SEMINAR

Thursday, 7 May 2015

14:15-15:00

2nd Floor Seminar Room

Hairy black holes in scalar tensor theories

Prof. Christos Charmousis

Laboratoire de Physique Theorique Univ. Paris-Sud, Orsay

Abstract

We will review scalar tensor theories of gravity, where we have an additional scalar field coupling non minimally to the metric tensor. By means of a theorem given by Horndeski back in 1974 we will briefly discuss the most general of these theories acquiring second order field equations. We will examine a particular sub-class of Horndeski theory which has interesting properties with respect to the cosmological constant problem. We will then find black hole solutions of this subclass which in some cases will be identical to GR solutions. The novel ingredient will be the presence of a time and space dependent scalar field. As we will see time dependence and higher order Galileon terms will bifurcate no hair theorems and provide scalar tensor black holes with a non trivial scalar field.

