



Institute Seminar

20 January 2016

4:00 p.m.

Fermion

Speaker:

Dr. Betti Hartmann

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Title:

The influence of the Gauss-Bonnet interaction on the properties of boson stars and hairy black holes

Abstract:

The Gauss-Bonnet (GB) term contains the curvature tensors in quadratic order and appears e.g as the first correction to the Einstein-Hilbert action in the low energy effective action of certain String Theories. In contrast to other extensions of General Relativity, the addition of the Gauss-Bonnet term does not alter the degrees of freedom - the equations describing the dynamics of the gravitational field remain second order. However, the Gauss-Bonnet contribution leads to a modification of these equations only in space-time dimensions larger than four. In this talk, I will describe how the properties of solutions to gravity-scalar field models change when taking the Gauss-Bonnet term into account. I will discuss globally regular solutions in the form of so-called boson stars as well as black holes which carry scalar hair on their horizon.
