



Universidad del País Vasco
Euskal Herriko Unibertsitatea
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Seminarios de Física Teórica Fisika Teorikoa: Hitzaldiak

Scalar field stars and black holes with scalar hair

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Abstract With direct gravitational wave detection as well as the first picture of the shadow of a black hole, there exists now complementary observational evidence that black holes - a priori a theoretical prediction of the best theory of gravity that we have to this day, General Relativity - do, indeed, exist in the universe. These recent observations show that the corresponding black holes can be extremely well matched to the Kerr solution, a vacuum solution of the Einstein equation that describes a black hole determined only by its mass and angular momentum. Observable black holes hence seem to be very simple objects that carry no additional structure (hair). However, models appearing in theories that try to explain e.g. the nature of dark energy or the inflationary epoch in the primordial universe as well as recent studies within the gauge/gravity duality contain black hole solutions that often carry hair. Moreover, stars made out of scalar fields - so-called boson stars - provide viable alternatives to supermassive black holes. In this talk, I will discuss boson stars and black holes that carry non-trivial scalar hair, respectively. I will motivate the models discussed and explain their applications.

Prof. A. Chamorro Seminar Room, Dept. of Theoretical Physics, Corridor 4.-2.

WEDNESDAY, Sept. 18th, 2019

Time:11:40 am