



Universidad del País Vasco
Euskal Herriko Unibertsitatea
The University of the Basque Country

Seminarios de Física Teórica Fisika Teorikoa: Hitzaldiak

Black hole superradiance and floating orbits around hairy black holes

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Abstract In this talk, I will give a brief introduction on black hole superradiance, a process in which bosons, such as axions and dark photons, with Compton wavelengths comparable to the size of astrophysical black holes grow exponentially to form clouds around black holes. I will also discuss some possible observational consequences of black hole superradiance. Particularly, I will show that if a star rotates around such a black hole, its tidal field may resonantly trigger the transition between a co-rotating state and a dissipative state of the cloud. A tidal bulge will be generated and will feed angular momentum back to the star. As a result, the star will be floating at the orbit of the resonance frequency until the cloud is fully dissipated.

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

Wednesday, Nov 21st, 2018

Time:11:40 am