



Dipartimento di Fisica  
Università di Cagliari  
INFN, Sezione di Cagliari



# HIGH ENERGY PHYSICS COLLOQUIA

21 febbraio 2018 · ore 14:30 · aula B

Edgardo Franzin  
*Università & INFN, Cagliari*

## ROTATING OBJECTS, GRAVITATIONAL WAVES AND INSTABILITIES

### Abstract

I will discuss two classic papers by Chandrasekhar\* and Press&Teukolsky.†

First, I will review the problem of the evolution of a constant density uniformly rotating ellipsoid which emits gravitational waves and its secular stability. Then I will comment two possible applications of superradiant scattering around highly spinning black holes, namely floating orbits and black-hole bombs.

\* S. Chandrasekhar, "Solutions of two problems in the theory of gravitational radiation," *Phys. Rev. Lett.* **24** (1970) 611.

† W. H. Press and S. A. Teukolsky, "Floating Orbits, Superradiant Scattering and the Black-hole Bomb," *Nature* **238** (1972) 211.

### Contatti:

Edgardo Franzin ([edgardo.franzin@ca.infn.it](mailto:edgardo.franzin@ca.infn.it))

<http://theory.ca.infn.it/seminars/>

