

# Hunting Dark Energy on astrophysical scales

*Thursday 8 December 2022 14:40 (20 minutes)*

State-of-the-art observations tightly constrain the properties of Dark Energy on Cosmological scales, where its behaviour is very close to the one of a cosmological constant. Whilst several Dark Energy candidates are capable of mimicking such a behaviour within the experiments' precision, they may be very distinguishable on smaller astrophysical scales. A rather common feature is that they couple with the gravitational field or other particles, from which an effective variation of some fundamental constants of nature (i.e. couplings) arise. In particular, we assess the drift they induce on astrophysical observables such as time delay between multiple lensed images, the size of Black Hole shadows and the frequency of their photon rings, as well as the shift on the spectral lines of stars in proximity of a supermassive black hole.

**Author:** GIANI, Leonardo

**Presenter:** GIANI, Leonardo

**Session Classification:** Gravity - Dark Energy

**Track Classification:** Dark energy