

**Título/Title:**

Searching for signatures of dark energy in the laboratory

**Orientadores/Supervisors:**

Ippocratis Saltas (IA-Lisbon) [isaltas@fc.ul.pt](mailto:isaltas@fc.ul.pt)

**Descrição/Description:**

The main objective is to understand the theoretical predictions of novel laboratory experiments aiming to test possible signatures of dark energy on earth.

The mysterious acceleration of the Universe has led physicists to speculate the existence of a new, fifth force, mediated by yet unknown particles, collectively termed as "dark energy". These particles, if they exist, are in principle expected to leave an impact on the classical as well as quantum properties of observable matter, and can be tested from cosmological to solar-system and earth-laboratory setups. In this project, the student will familiarize himself/herself with the basic idea behind dark energy, and explore novel laboratory tests and predictions to test its signatures on earth.

**Requisitos/Requirements:**

Although the project is mostly theoretical, there might be need for some simple numerical calculations, while the student is expected to have an understanding of classical and quantum mechanics at the undergraduate level.