



Laboratório de Instrumentação e  
Física Experimental de Partículas

**L I P**

## Seminário LIP

Quinta Feira, 27 de Junho 2019

15:30

### The shadow of a Black Hole (2019) and the problematic measurement of light deflection by the sun in 1919

Rui Agostinho (FCUL)

The Event Horizon Telescope (EHT) has published in 2019 the first ever image of an Event Horizon, from the very massive central black hole in the M87 galaxy. The team has chosen to publicize it 100 years after the first measurement of light deflection by a strong gravitational field, which was a landmark for the Theory of Relativity in 1919. This new image did not require a technological revolution and neither did the images taken in 1919, however they all imprint the History of Physics.

The results on the change of stars' positions around the sun, in the total solar eclipse in May 1919, as measured by the Dyson's and Eddington's teams in Sobral (Brasil) and the island of Principe (S. Tomé, Portuguese at the time), were both consistent with the newtonian mechanics as well as relativistic predictions, which gave some discomfort to the general acceptance of the final conclusion.

In this presentation I'll give a general historical overview of the facts, but I'll discuss the details on the measurement of the EHT image, the astrometry of the 1919 results, and how and why the old photographic plates were reanalyzed in order to confirm the relativistic effect.

**Local: Sala de Seminários (311)**

**LIP, Av. Prof. Gama Pinto, N° 2, 1649-003 Lisboa**

**<https://indico.lip.pt/event/589/>**

**(Café e bolinhos 30 min antes)**

**O evento terá transmissão por streaming (caso o orador o autorize):**

**URL: <https://videocast.fccn.pt/live/lip/seminarios>**

**PIN: LIP-seminario-2019-06-27**