

**Guy Perrin**

LESIA - Observatoire de Paris

Bruno Mazoyer - LAL Orsay 2019

**First explorations of Sgr A*
at the event horizon scale
and first tests of general
relativity with GRAVITY**

**mardi 11 juin 2019
à 16h00,
Amphithéâtre Lehmann
(LAL)**

Séminaire SCOP

Séminaire commun des départements P2I et SPU de l'Université Paris-Saclay et du LabEx P2IO

Séminaire SCOPi Paris-Saclay

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First explorations of Sgr A at the event horizon scale and first tests of general relativity with GRAVITY*

The existence of black holes has been predicted for a long time, even before general relativity was sketched by Albert Einstein. Their extreme compactness makes them difficult to explore on spatial scales close to the event horizon.

Sagittarius A*, at the center of the Galaxy, is the black hole with the largest angular size. A collaboration of European astronomers has built the GRAVITY instrument for the Very Large Telescope Interferometer of ESO to test the black hole nature of Sgr A* thanks to observations in the infrared at unprecedented spatial scales. General relativity can consequently also be tested at these scales in an extreme regime of gravity.

I will present the detection of gravitational redshift with the star S2, the closest star known to Sgr A*. I will also present the first measurements of orbits of infrared flares occurring near the event horizon. I will conclude on the promising prospects of GRAVITY.

*Auditorium Pierre Lehmann, Bât.200 - Campus Universitaire d'Orsay
Le séminaire sera précédé d'un café/thé à 15h45*

Le LABoratoire d'EXcellence Physique des 2 Infinis et des Origines (P2IO) organise conjointement avec les départements Physique des 2 Infinis (P2I) et Sciences de la planète et de l'Univers (SPU) de l'Université Paris-Saclay une série de "Séminaires Communs des Origines et de la Physique des 2 Infinis" (SCOPi). Ces séminaires s'adressent à un large public.