

DRF: Thesis SL-DRF-20-0972

RESEARCH FIELD

Astroparticles / Corpuscular physics and outer space

TITLE

Dark energy and cosmological constraints with emission line galaxies in the spectroscopic survey DESI

ABSTRACT

The late acceleration of the Universe expansion, revealed at the end of the 1990s and confirmed since then with more precise cosmological data, remains unexplained. Modifications to General Relativity at large scales offer a promising explanation. Among the measures, that of the growth rate of structures is the most direct way to test the predictions of General Relativity, since gravity is the driving force behind this growth. This PhD proposes to use observations of the recently commissioned DESI spectrograph to measure the clustering of emission line galaxies, the main tracer of DESI. The aim is to derive a measurement of the growth rate of structures and to compare it with General Relativity predictions in order to search for possible deviations.

The thesis will take place at Irfu, the Institute for Research on the Fundamental laws of the Universe. The PhD student will join the cosmology group of Irfu/DPhP, composed of 9 physicists, 6 PhD students and 2 post-docs. Actively involved in the eBOSS and DESI experiments, the group also participates in Euclid and has in the past had a strong contribution in the SNLS, Planck and BOSS international collaborations. The future PhD student will be integrated into the DESI collaboration and will benefit from all the group's expertise acquired on BOSS and eBOSS.

LOCATION

Institut de recherche sur les lois fondamentales de l'univers
Service de Physique des Particules
Groupe Cosmologie (GCOSMO)
Place: Saclay
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CONTACT PERSON

Vanina RUHLMANN-KLEIDER
CEA
DRF/IRFU/DPHP/GCOSMO
DRF/Irfu/DPhP
CEA/Saclay
91191 Gif-sur-Yvette Cedex
Phone number: +33 1 69 08 61 57
Email: vanina.ruhmann-kleider@cea.fr

UNIVERSITY / GRADUATE SCHOOL

Paris-Saclay
PHENICS

THESIS SUPERVISOR

Etienne Burtin
CEA
DRF/IRFU/DPHP/GCOSMO
DRF/Irfu/DPhP
CEA/Saclay
91191 Gif-sur-Yvette Cedex