

# One postdoctoral position in line-of-sight effects in strong gravitational lensing

## Laboratoire Univers et Particules de Montpellier

### Université de Montpellier

### France

#### Job description:

The Theoretical Particle Physics and Cosmology group of the “Laboratoire Univers et Particules de Montpellier” (LUPM) based in Montpellier, France, invites applications for **one** post-doctoral position to work on line-of-sight effects in strong gravitational lensing. The successful candidate will be hired to a CNRS/IN2P3 “Fellowship of the two infinities” to work with Dr Julien Larena, Théo Duboscq (PhD candidate) and an external network of collaborators. **The position is intended for two years to start in September 2023** or soon after.

**About the group:** The group has a wide range of activities, including the theoretical and phenomenological exploration of the dark matter problem in astrophysics and cosmology, the study of various aspects of the primordial universe (inflation, baryogenesis) and late universe (LSS observables, gravitational lensing, cosmic tensions), as well as the building and study of particle theories beyond the standard model (BSM). It is composed of 8 permanent researchers and faculties, a few emeriti, and several postdocs and PhD students. For more information about the group [see here](#).

**Profile:** The successful applicant should have obtained their PhD at most three years before starting the postdoctoral fellowship. They will have some experience in the modelling of strong lensing events and/or in cosmic weak lensing. They will work with Dr Larena on the the weak lensing of strong lensing events, addressing questions such as:

1. Can the line-of-sight shear be used to constrain cosmic shear and how?
2. Can we use future surveys to probe cosmic lensing beyond shear and constrain the properties of dark matter on small scales?

They will be also encouraged to interact with other team members, in particular younger researchers, and to lead independent research.

**Application material:** Applications should include a CV, a copy of a valid Identity Document (ID), a list of publications with a short discussion of up to three selected publications, a research statement and a cover letter. They should also arrange for three letters of reference to be sent to [julien.larena@umontpellier.fr](mailto:julien.larena@umontpellier.fr).

**Deadline:** Applicants are requested to send their application material before the **22<sup>nd</sup> of January 2023**. Interviews will be conducted in the second part of February 2023. **The call will remain open until the position is filled**. All qualified applicants will receive consideration and will not be discriminated against on the basis of race, colour, sex, sexual orientation, gender identity, religion, disability, age, or national or ethnic origin.

**Additional information:** The position comes with a competitive salary based on the applicant's experience, access to the French social security system that covers all basic health expenses, and up to seven weeks of paid vacations.

Montpellier is a vibrant city, a few ten's of minutes away from the Mediterranean sea, with many social and cultural events happening all year long. The University of Montpellier, where the LUPM is located, is one of the biggest in France, with close to 80 000 students, making the city very lively. Moreover, the city is only 2 to 3 hours away by train from many major city (Paris, Barcelona, Lyon, Marseille), making it very easy to collaborate on scientific topics or simply travel. Montpellier also has an airport with many affordable destinations in Europe.

**Contact:**

- Julien Larena ([julien.larena@umontpellier.fr](mailto:julien.larena@umontpellier.fr))

**Letters of Reference should be sent to:**

- [julien.larena@umontpellier.fr](mailto:julien.larena@umontpellier.fr)

**More Information:**

- <https://www.lupm.in2p3.fr/en/research/research-teams/particles-astroparticles-cosmology-theory/>