

Postdoctoral position in deep learning for weak gravitational lensing

2-year postdoctoral research position

The CEA Saclay astrophysics department (DAp) invites applications for a postdoctoral position in cosmology. The successful candidate will work with Dr. Martin Kilbinger and Dr. Samuel Farrens on weak-gravitational lensing, and develop cutting-edge machine- and deep-learning methods for galaxy shape measurement. This position is funded by the inter-disciplinary ANR project AstroDeep (PI: Eric Aubourg). The successful candidate will join the AstroDeep team that gathers experts in cosmology, weak lensing, deep learning, data mining, Bayesian neural nets, and other related fields. The objective of this postdoctoral research is to identify and develop well-suited machine-/deep-learning tools to solve problems of weak-lensing data processing for the upcoming large cosmological surveys Euclid and LSST. Existing ground-based data from the UNIONS/CFIS survey is available to test the methods developed in this project. The successful candidate will have the opportunity to join the Euclid and UNIONS/CFIS consortia.

The candidate should hold a PhD in either physics/astrophysics, engineering, mathematics or computer science. Candidates with either a scientific or technical background are welcome to apply. Our group is committed to diversity and equality, and encourage applications from women and underrepresented minorities. We support a flexible and family-friendly work environment. The position includes an internationally competitive salary and generous travel budget. French language skills are not required. Applicants should send a CV and research statement to Martin Kilbinger and Samuel Farrens, and arrange for three reference letters to be sent to the same email address before the application deadline.

Benefits for this position include retirement, health care, parental leave, vacation and sick days, subsidized meals, discount for public transport, sport and culture, French language classes.

CEA Saclay is located 20 km south of Paris, France, in the vicinity of various universities and other research centers. The Paris region contains numerous research institutes. The candidate will join the CosmoStat group at DAp, a diverse and multi-disciplinary team of researchers working on various topics in cosmology and signal processing such as weak gravitational lensing, cosmic microwave background, modified gravity, gravitational waves, radio interferometry, blind source separation, and machine learning.

- *Contact:* Martin Kilbinger (martin.kilbinger@cea.fr) and Samuel Farrens (samuel.farrens@cea.fr).
- *URL:* www.cosmostat.org
- *Deadline for applications:* December 20th, 2019.
- *Start date:* October 1st, 2020.
- *Contract duration:* 24 months.