

Title: [Physics at the infinitely large and the infinitely small scales of our Universe](#)

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Research Area:

High Energy Physics / cosmology, astrophysics and neutrino physics.

Methods:

Participation in the taking of experimental data and quality checks, in the development of new detectors or experiments, in the analysis of physics data with confrontation with theoretical models and publication of the results.

PhD track subject

Our laboratory, called the "International Laboratory for Astrophysics, Neutrino and Cosmology Experiments" is located on the Kashiwa campus of University of Tokyo in the northeast of the city of Tokyo. The ILANCE laboratory permanently hosts scientists from French CNRS laboratories and from four departments of University of Tokyo. The PhD track student will follow the IP Paris master's courses by doing his internship and thesis work in Japan in the ILANCE laboratory. He will benefit in Japan from an exceptional scientific environment with French and Japanese supervision for his work and internship. ILANCE has defined five priority areas for its outstanding scientific program which essentially brings together the most representative research subjects of the physics of the two infinities: gravitational waves, the primordial universe, neutrino messenger, the dark universe and high energy astrophysics. The history of our universe has been dominated by the intimate relationship between these domains since its earliest moments just under 15 billion years ago. Over the next decade, experiences from these different fields have the potential to revolutionize our understanding of the formation and evolution of the universe with participation from ILANCE teams. The PhD track student will have the choice between the following experiences for his internship and PhD research work: KAGRA, SUBARU, Hyper-K/Super-K, LiteBIRD and CTA.



Références :

<https://ilance.cnrs.fr/>

<http://litebird.jp/eng/>

<https://gwcenter.icrr.u-tokyo.ac.jp/en>

<http://www.hyper-k.org/en>

<http://www-sk.icrr.u-tokyo.ac.jp/sk>

<https://www.nao.ac.jp/en/research/telescope/subaru.html>

<https://www.cta-observatory.org>