

Laser for ground tests of the LISA mission payload Post Doc Proposal

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Start : April 2020
Location : Laboratoire SYRTE / Observatoire de Paris

Ultra-stable frequency laser development For ground tests of the payload of LISA mission

The SYRTE laboratory offers a contract engineer position for an initial period of 16 months (which can be extended) to participate in the development of a transportable frequency-stabilized laser source for ground tests of the payload of the LISA (Laser Interferometer Space Antenna) mission dedicated to the detection of gravitational waves in space. This development is supported by the french space agency (CNES).

LISA is an ESA-led space mission based of 3 separate satellites, 2.5 million km apart, aimed at detecting low frequency gravitational waves. LISA has been selected by ESA (European Space Agency) in 2017, with launching date scheduled for 2034. The mission is currently in Phase A (preliminary definition).

The work will be carried out at the SYRTE laboratory located at the Observatoire de Paris (Paris 75014). Based in part on developments previously demonstrated in the laboratory, the new project will use an innovative approach for the frequency stabilization purpose. The targeted frequency stability is better than LISA mission requirement which is currently at the level of $30 \text{ Hz}/\sqrt{\text{Hz}}$. The architecture of the whole optical setup is designed fully fibered to facilitate its transportation, and to insure long term stability. At the end, the setup will be transferred to the french space agency CNES (Centre National d'Études Spatiales), which coordinate activities of LISA-France consortium gathering more than ten french laboratories involved in the AIVT of the LISA mission.

Skills:

We look for a graduated student with an engineering degree or a PhD in physics with expertise in molecular spectroscopy and low noise signal analysis. Knowledge in the field of nonlinear optics and of instrumentation will be appreciated.

Position:

The starting date for this position is April 2020.

Procedure:

Applicants interested in this proposal should send their CV and letters of recommendation to Ouali.acef@obspm.fr