

« Physique des Plasmas et de la Fusion »

Proposition de stage (5 à 6 mois à partir de mi-mars) : **oui**
Proposition de thèse : **non**

Date de la proposition : 18/10/2021

Ne pas dépasser une page / Do not exceed one page

Responsable du stage ou de la thèse / internship or PhD supervisor:

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Nom du Laboratoire / laboratory name:

Code d'identification : LULI Laboratory	Organisme / Institution : CNRS/Ecole Polytechnique/CEA/Sorbonne Un.
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Site Internet / web site: <https://portail.polytechnique.edu/luli/fr/installations/apollon>

Adresse / address: LULI, Bâtiment Euclide et Orme des Merisiers, 91190 Saint-Aubin CEDEX

Lieu du stage ou de la thèse / internship or PhD place: LULI

Titre du stage (de la thèse) / Characterization and validation of a laser configuration based on two plasma mirrors to enhance temporal contrast on targets

Résumé / summary

Temporal contrast is a very critical parameter when performing experiments at extremely high intensities. Short focal area enables shots on a 6µm diameter, with pulse duration of 15fs (currently measured at 20-22fs due to some limitations) and energy levels up to 150J for the 10PW beamline. In order to optimize the temporal contrast, a pair of plasma mirrors will be set up at the output of the 10PW compressor. A first optical study was made to define a first design.

This design has to be tested under realistic conditions to verify its performance and working out. This test will be done with the 1PW line, in one of Apollon experimental areas. Specific plasma diagnostics will be needed; during the internship, the student will define the required laser parameters and all the diagnostics, and realize their integration in the experimental chamber, to perform their characterization.

He/she will work closed to the integration team, the mechanical team, and the laser team. At the end of the internship, we aim to have results about the performance of this pair of plasma mirrors, validating their use, or options to enhance further results.

Toutes les rubriques ci-dessous doivent obligatoirement être remplies

Ce stage pourra-t-il se prolonger en thèse ? Possibility of a PhD ? : NON

Rémunération du stage/ financial support for the internship : OUI

Financement de thèse envisagé / financial support for the PhD : NON

Type de stage et/ou de thèse (expérience/théorie/simulations) : expérience

Fiche à transmettre (fichier pdf **obligatoirement**) à Catherine Krafft, catherine.krafft@universite-paris-saclay.fr
 Please send pdf file to catherine.krafft@universite-paris-saclay.fr