

Spécialité de Master « Optique, Matière, Paris »

Stage de recherche (4 mois minimum, à partir de début mars)

Proposition de stage (ne pas dépasser 1 page)

Date de la proposition :

Responsable du stage / internship supervisor:	
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Nom du Laboratoire / laboratory name: ratoire pour l'Utilisation des Lasers Intenses (LULI)	
Code d'identification :UMR7605	Organisme :CNRS
Site Internet / web site: https://portail.polytechnique.edu/luli/fr/personnel/equipes-de-recherche/equipe-sources-de-particules-rayonnement-intenses	
Adresse / address: Ecole Polytechnique, Palaiseau	
Lieu du stage / internship place: sur place+déplacement pour expériences	

Titre du stage / internship title: Investigating new ion acceleration schemes with lasers
Résumé / summary As discovered in the year 2000, proton and ion beams accelerated from solid targets by ultrafast lasers have remarkable characteristics that have enabled unique applications like ultrafast radiography or prompt heating of matter to high-temperature, uniquely enabling investigating these states of matter at the hart e.g. of giant planets. The current challenge is to increase the ion energy to and beyond, in particular to enable medical applications. For this, the project will center on investigating promising novel ion acceleration mechanisms (Radiation-Pressure and Shock Acceleration) for which our group has developed unique an novel targets. Aside from the question of the energy, the laser-to-proton yield is now of a few %, while the novel mechanisms we intend to investigate could lead to yields of a few tens of %. The student will take advantage of a planned experiment at the PHELIX laser facility at GSI (Darmstadt, Germany), planned in May 2017. He/she will be in charge of some diagnostic and data analysis. The project is intended for a PhD continuation, for which the student will build on the expertise of our group in laser-driven ion beam generation and of the upcoming Apollon laser facility, the highest-power laser that will come online in mid-2018 in France, at LULI. The work will be carried out in conjunction with partner groups and facilities, at the sub-PW, or PW level, namely Arcturus (Germany), ELI-NP (Romania), JLF at LLNL (USA), PEARL in Russia.
Toutes les rubriques ci-dessous doivent obligatoirement être remplies

Ce stage pourra-t-il se prolonger en thèse ? Possibility of a PhD ? : Oui			
Si oui, financement de thèse envisagé/ financial support for the PhD: bourse ouverte au concours			
Lumière, Matière, Interactions	X	Lasers, Optique, Matière	X

Fiche à transmettre (fichier pdf **obligatoirement**) sur le site <http://stages.master-omp.fr>