

GROUP FOR LASER ION ACCELERATION

Our group is working at Centre for Advanced Laser Applications (CALA), which will hosts one of the most powerful lasers in the world at the Forschungszentrum in Garching. To support our experimental team, in the development and operation of a unique Target system for isolated micro-spheres, we are currently looking for a talented and motivated

MASTER STUDENT

The Paultrap Target system offers the unique possibility to position micron sized spheres in the micron size focus of a high power laser. Soon this target system will be implemented in the LION experimental area at the Petawatt class ATLAS 3000 laser. To gain insight into the dynamics of the plasma on a picosecond timescale before interaction with the main laser pulse, we plan to implement an optical probe beam.

In the framework of your thesis you will design, implement and characterize the probe setup. Additionally you will participate in the experimental campaigns at the ATLAS 3000 laser. You will gain experience designing and characterizing optical systems, as well as operating and working with an ultra-high power laser system.

Basic knowledge of laser-plasma interactions is beneficial, but not mandatory. Programming in Python will be necessary for the work. Enjoyment of experimental work and great motivation are major prerequisites.

If we caught your attention, we would be happy to receive your application including your transcript of records and CV to the email address below. You are always welcome to visit us in Garching for a lab tour and a chat in person.

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LASER-DRIVEN ION ACCELERATION (LION)

LION has been an emerging research field since its first observation in 2000. We use ultrashort high-power lasers, applying technology awarded with the 2018 Nobel Prize in Physics. Focused on solid density targets, highly energetic ion are emerging the plasma. Beams from this source feature unique beam properties that will drive manifold applications in medical physics and elsewhere.

ISOLATED MICROSPHERES

We use a linear Paul trap to precisely position micro-spheres in the micrometer-sized focus of a high power laser. The full positional control over fully isolated targets is unique in the laser plasma community and enables detailed studies on the laser matter interaction.