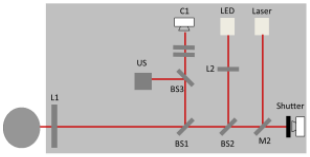
Looking for an exciting Masterthesis? – Thesis positions available at AG Schreiber

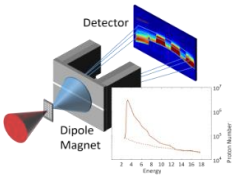
The experimental work of our group is based around the 3 petawatt laser ATLAS at the Centre for Advanced Laser Applications (CALA) in Garching. We use this brand new and worldwide unique system to develop laser-driven ion (LION) sources to a maturity for real world applications.

Final amplifier stage of the ATLAS 3000 laser

Our research activities span from simulation, data evaluation to hands-on lab work, available topics in our group include:

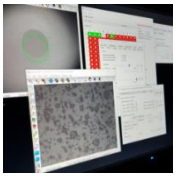
Light based laser-plasma diagnostics With the commissioning of the LION source at CALA we require light based diagnostics, monitoring the interaction of the laser with the plasma continuously. The work will contain setting up and taking care of diagnostics, support at experiments, writing programs for automated data acquisition as well as evaluation of the recorded data.





Particle detector development The ultra-short and high fluence particle bunches from the source have to be detected and evaluated. Key parameters are particle yield per energy slice and peak energy. The expected reduction of bunch length requires additional developments for ultra-fast high-resolution detectors with repetition rate capability in the Hz range.

Targetry development Further development of the production process (e.g. spin coating) and deployment of a novel, repetition rate nm thin foil target that can intrinsically improve laser contrast and thus improve and stabilize particle yield and peak energy.



Further information on our research:
https://www.cala-laser.de/
https://www.med.physik.uni-muenchen.de/research/laser-acceleration

LION experimental vacuum chamber

Currently our main project is to prepare our large (4 m³) vacuum chamber for LION experiments at CALA starting in October. This is an exciting time to join our group: You will have the opportunity to work with one of the world's most powerful lasers, and be a part of and contribute to the first experiments with it.

If you are interested in our research activities, we would like to invite you for a lab tour!

Contact: jens.hartmann@physik.uni-muenchen.de
(please attach a short CV and a transcript of records)