

Update on the THRILL project: Towards High-Energy Lasers at High Repetition Rates

Mittwoch, 28. Januar 2026 17:00 (1 h 30m)

The EU-funded THRILL project (Technology for High-Repetition-Rate Intense Laser Laboratories) has the goal to identify the most appropriate architecture of the next generation high-energy (kJ-class) lasers to be used in combination with the large-scale European research facilities Eu-XFEL and FAIR. Here the increase of the repetition rate from few shots per day to the one shot per few minutes would represent a game changer in the applications of this type of laser system in a number of research fields, such as the investigation of shock-driven warm-dense matter, dynamic compression of materials, or laboratory astrophysics.

While THRILL is entering its final year, we will review the progress within the project achieved by the consortium, in particular on the topics of actively cooled high-energy laser amplification, high-energy beam-quality-conserving beam transport and optical coatings for large optics. First considerations towards the concept of a high-energy laser at FAIR will also be discussed.

Autor: SLATTERY-MAJOR, Zsuzsanna (GSI Helmholtzzentrum für Schwerionenforschung GmbH(GSI))

Co-Autoren: Dr. ZIELBAUER, Bernhard (GSI Helmholtzzentrum für Schwerionenforschung GmbH(GSI)); BAG-NOUD, Vincent (GSI Helmholtzzentrum für Schwerionenforschung GmbH(GSI))

Vortragende(r): SLATTERY-MAJOR, Zsuzsanna (GSI Helmholtzzentrum für Schwerionenforschung GmbH(GSI))

Sitzung Einordnung: Poster Session 2