

Second Circular:

INTERNATIONAL EMMI Workshop on Plasma Physics at FAIR July 11th -13th, 2016 at FAIR/GSI Helmholtzzentrum Darmstadt

Workshop web-site: <https://indico.gsi.de/conferenceDisplay.py?confId=2164>

The INTERNATIONAL EMMI Workshop on Plasma Physics at FAIR will take place on July 11th -13th, 2016 at FAIR/GSI Helmholtzzentrum Darmstadt. This workshop will give the community a platform to present and discuss an updated view on the plasma physics science program at FAIR. In conjunction with the workshop a collaboration meeting will be held.

You are cordially invited to present your possible contributions and ideas on the basis of your recent work to the below listed workshop topics within the scope of FAIR and to attend the collaboration meeting. Please use the above web-site to submit abstracts as soon as possible, indicating preference on oral or poster presentation. The submission-deadline for abstracts is June 10th, deadline for registration as participant is July 5th !!

The Plasma Physics program at FAIR, one essential part of the FAIR project, has been originally formulated more than a decade ago. It now appears that we will see a start of FAIR experiments in 2022, already offering absolutely exciting beam parameters and a projected steady increase in the following years. The time-line of the project is now asking for contributions to several phases, including a "phase 0" preparatory phase using the up-graded GSI facilities and starting in 2018, and a "first day" usage of the FAIR facilities immediately following the commissioning of the SIS 100 accelerator and the first experimental caves.

In view of the rapid progress of the plasma physics research worldwide we may reevaluate our scientific priorities according to the additional interest and the expected experimental conditions. In particular the field of Warm Dense Matter has seen a tremendous growth and enhancement, due to the alternative efforts using anvil cells, high-power lasers, and the up-coming FEL facilities. New and further developed diagnostic schemes have evolved. In total our field has become of utmost interest to basic theory and applications also to the physics community outside of Plasma Physics. e.g. Material Science and Biophysics. Any contributions within this broadened horizon will be appreciated. Workshop topics include:

- Physics of High Energy Density states: Theory, Experiments, Diagnostics
- EOS of Matter under Extreme Conditions
- Energy transport in Warm Dense Matter
- Status of HED Research at Facilities World Wide
- Atomic Processes in Strongly Coupled Plasmas
- Laser based photon and particle sources for HED/WDM-diagnostics
- Materials Research, Atomic Physics, and Biophysics related to Plasma Physics

Collaboration meeting:

Since the scientific program of plasma physics research at FAIR was established we have experienced several changes in the FAIR scope and planning, to which our community has to adapt. Goals of the Collaboration Meeting are:

- To update the science case of plasma physics at FAIR
- To determine one or a few "first day" flagship capabilities
- To work on a staged prioritized timeline for the experiments and related theory
- To discuss the technical development, progress and related issues
- To establish a platform for the upcoming negotiations with FAIR and GSI

Dieter HH Hoffmann and Vincent Bagnoud (co-chairmen of the workshop)