ACCELERATOR SEMINAR

Ralph Assmann

DESY

Thursday, 18. February 2021 at 4 pm

Online-Seminar via Zoom

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The EuPRAXIA Project for a European Research Infrastructure

Particle or laser beams can excite longitudinal fields in the order of 10-100 GV per meter in a plasma column. Those plasma wakefields have been used to accelerate electron beams by up to 42 GeV in a distance of only 1.4 m. There is the promise for a new generation of highly compact and cost-effective particle accelerators. Those concepts could help overcoming practical limitations for new accelerator facilities related to size and cost. The consortium for EuPRAXIA ("European Plasma Research Accelerator with eXcellence In Applications") has published the conceptual design report for a first plasma-based accelerator facility that could serve users with electrons, positrons and X rays for a variety of applications. Supported at government level by five European countries and a consortium of 40 member institutes plus10 observers from 15 countries, the EuPRAXIA consortium has submitted an application to the European Strategy Forum for Research Infrastructures (ESFRI). The concept of the proposed European facility is presented, several innovative EuPRAXIA concepts are explained and the economical cost-benefit-analysis is discussed. The status of the project implementation and its outlook are reviewed.

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