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Proton Boron Fusion revisited with respect to Laser Fusion and Accelerator Driven High Energy Density Science

Friday, 11 September 2020 11:00 (30 minutes)

High Energy Density Physics (HEDP) with intense heavy ion beams is a complementary tool to induce extreme states of matter. The development of this field connects intimately to the advances in accelerator physics and technology. Thus the upcoming high intensity particle accelerators like FAIR at GSI Darmstadt, the proposed HIAF facility in China, and in some respects also NICA at Dubna are a new tools to induce High Energy Density states in matter. We will give an account of High Energy Density Physics with aspects of inertial fusion energy and due to recent developments we will address Proton-11Boron fusion. After a short introduction of Inertial Fusion and Inertial Fusion Energy we will discuss the development of High Energy Density Physics (HEDP) with intense heavy ion beams as a tool to induce extreme states of matter, starting from the ion source and follow the acceleration process and transport to the target. Intensity limitations and potential solutions to overcome these limitations are discussed. This is exemplified by discussing examples from existing machines at the Gesellschaft für Schwerionenforschung (GSI-Darmstadt), the Institute of Theoretical and Experimental Physics in Moscow (ITEP-Moscow), and the Institute of Modern Physics (IMP-Lanzhou). Facilities under construction like the FAIR facility in Darmstadt and the High Intensity Accelerator Facility (HIAF), proposed for China will be included. Developments elsewhere are covered where it seems appropriate along with a report of recent results and achievements

Is this abstract from experiment?

Yes

Name of experiment and experimental site

N/A

Is the speaker for that presentation defined?

Yes

Details

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