

AVVISO DI SEMINARIO

Il giorno 13 Giugno 2022 ore 11.00, aula U2-04

“Inertial Confinement Fusion: recent results and perspectives”

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In August 2021, 1.3 MJ of fusion energy was generated using 1.9 MJ laser energy at the National Ignition Facility in the US. This breakthrough result provided an experimental validation of the inertial Confinement Fusion concept. In the talk, I will start from a brief presentation the basic physical concepts of ICF (Lawson criterium in ICF, efficiency of fuel consumption, need for implosion, rocket model, hydrodynamic instabilities, etc.) to finally discuss the NIF results.

In the second part of the talk, I will present the perspectives for the future. In particular, NIF results were obtained using the indirect drive approach in which the compression of the thermonuclear fuel is due to the X-rays generated inside a laser-irradiated cavity (holhraum). In order to progress beyond NIF results and obtain the gain which is needed for inertial fusion energy production (IFE) we must now explore the “direct drive” approach and in particular the shock ignition variant which could minimize the impact of hydro instabilities. These are the goal of the Eurofusion project on Direct Drive and Shock Ignition and of the recent HiPER+ initiative launched to propose the construction of a new laser facility dedicated to IFE in Europe.

Colleghi, studenti e tutti gli interessati sono invitati a partecipare.

Per informazioni rivolgersi a

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