



UNIVERSITÀ DI PISA

Dipartimento di Fisica



Ciclo di Seminari di Fisica della Materia *Physics on Friday - 2018*

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*Progress on Inertial Confinement Fusion
and the “shock-ignition” approach*

Venerdì 2 marzo 2018, ore 11.30

Aula M1, Dipartimento di Fisica, Pisa

Very large laser facilities are currently used to study the process of inertial confinement (ICF) fusion and the possibility of igniting thermonuclear targets. These include the NIF (National Ignition Facility) at the Lawrence Livermore National Laboratory in the US, and the LMJ (Laser Megajoule) at the CEA site of Le Barp near Bordeaux. Despite undoubted and huge progresses, the goal of achieving ignition has not been reached yet. The talk will introduce the recent progress in ICF, highlight the main problems towards ignition, and finally addressing the recent “Shock Ignition” approach to ICF, which relies on a sub-ns high intensity laser spike that irradiates the target at the end of the compression phase, generating a strong shock converging in the center of the compressed spherical target and providing the temperature increase needed to trigger fusion reaction. Several experiments have been and are conducted not only in the US but also in Europe to answer pending physics issues in this scheme. The talk will show such undergoing experimental efforts and future perspectives.