



POLITÉCNICA



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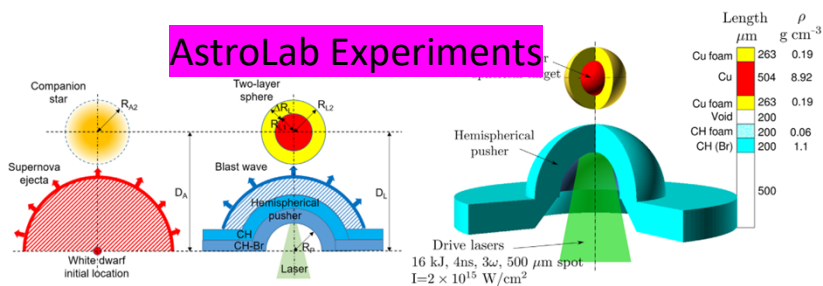
www.denim.upm.es

Nuclear Data in Nuclear Fusion Facilities

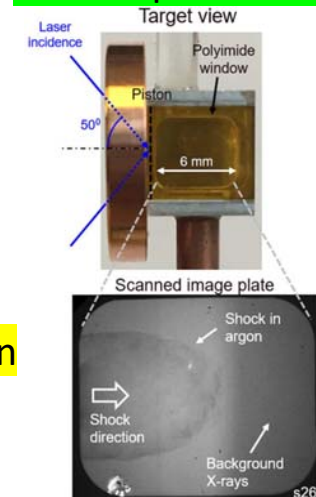
- Diagnosis: Nuclear data for improved measurements of fusion reaction rates.
- Activation of structural materials
- Material damage of chamber and structural materials.
- Energy production en nuclear reactors.

ICF Target Design and Nuclear Security

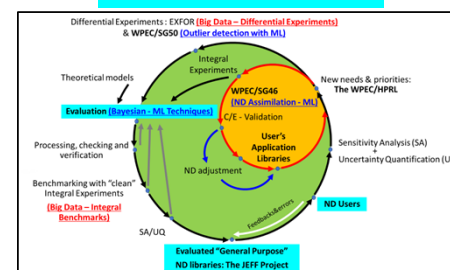
AstroLab Experiments



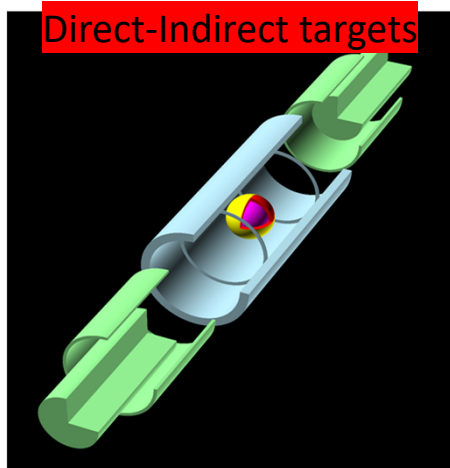
Laser Experiments



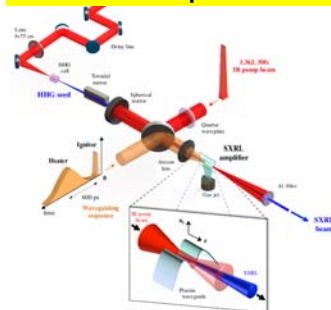
Nuclear Data ML



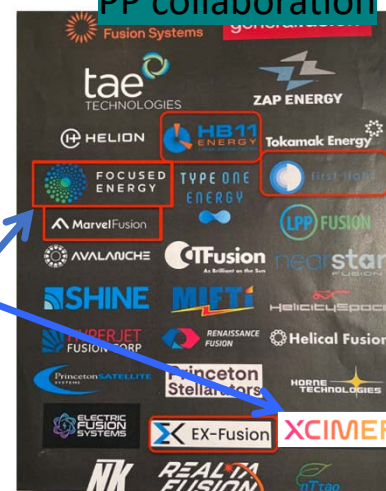
Direct-Indirect targets



Fs XUV amplification



PP collaboration



Reactor Studies, First Wall, Optical Components

First Wall and TBR

CHAMBER PROTECTIONS

Gas Protected Chamber such as LIFE

With a buffer gas, debris ions and x-rays are deposited in the chamber gas, which re-radiates the energy in the form of softer photons over a longer time scale.

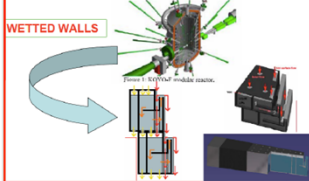
Debris ions
x-rays

Xe at pressures of ~10 Torr can absorb most of the energy

Ions are stopped in ~10s of cm of xenon gas and x-rays are mostly absorbed

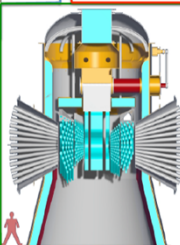


Wetted Wall chamber such as KOYO-F

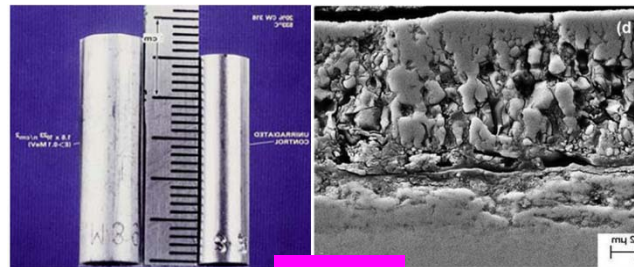
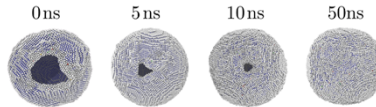


Thick Liquid Wall chamber such as HYLIFE-II

Thick liquid "pocket" shields chamber structures from neutron damage and reduces activation



Nanoparticles



Coating

HiPER Chamber

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