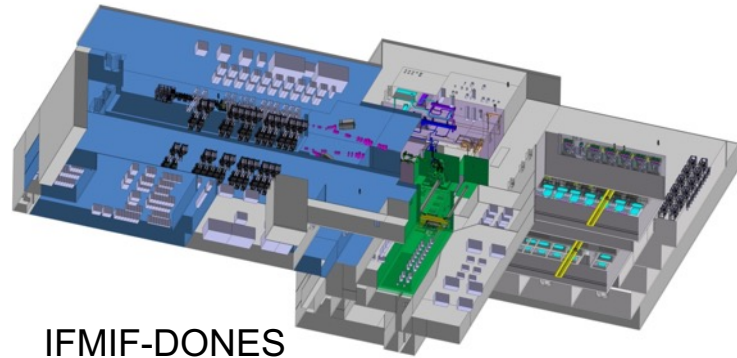


IFMIF-DONES

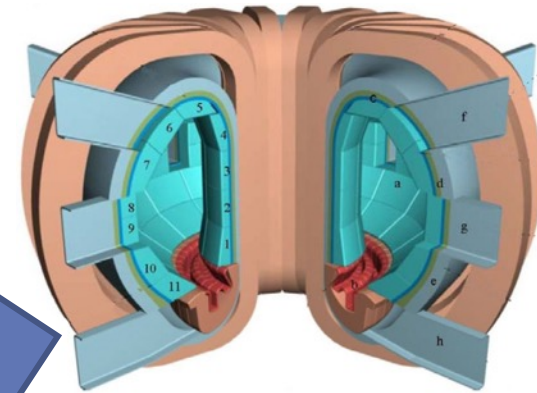
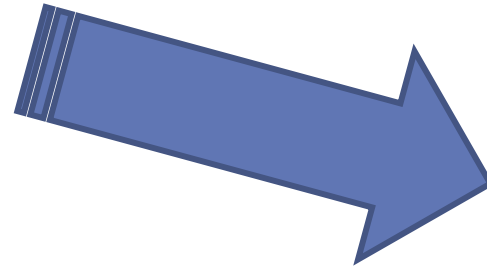
Carlos Alejandre
on behalf of the IFMIF-DONES team



ROADMAP TO NUCLEAR FUSION ENERGY

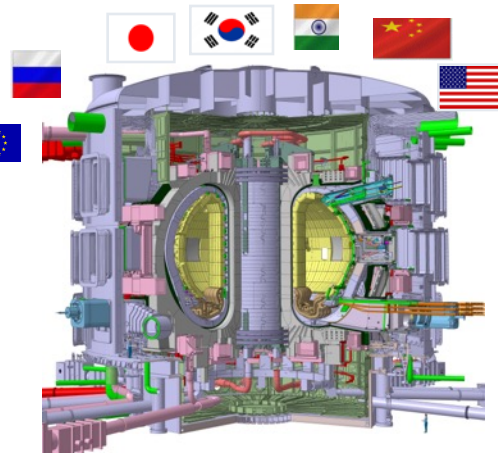
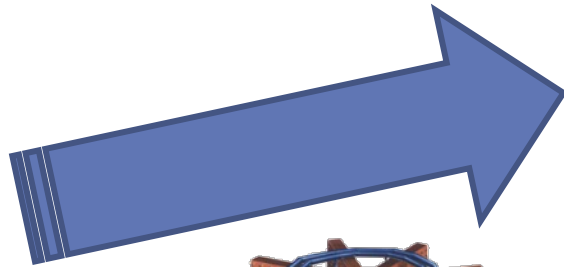


IFMIF-DONES
D+ beam, 40 MeV, 125 mA on a Li target



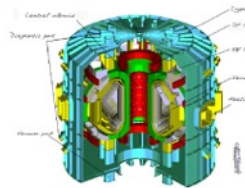
DEMO $\geq 500 \text{ MW}_{\text{el}}$

1-2 hours

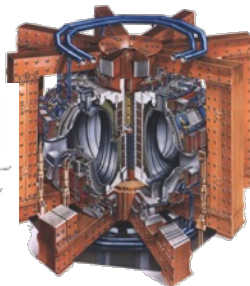


ITER – $500 \text{ MW}_{\text{th}}$

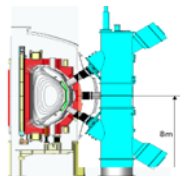
300– 500 secs



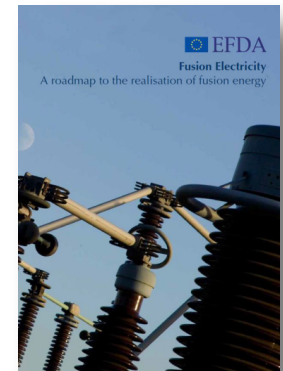
K-STAR 



JET 



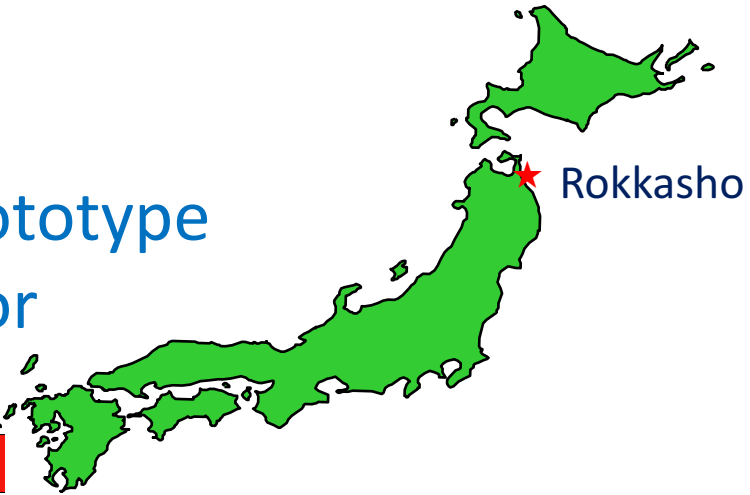
JT-SU 





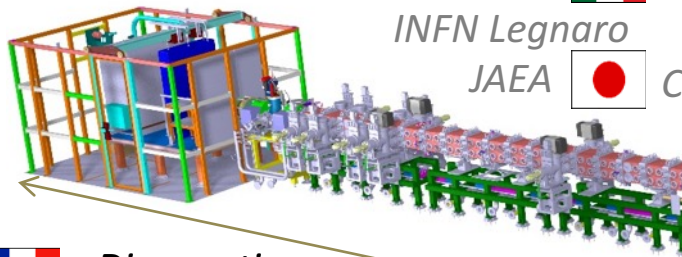
Current accelerator design validation (ongoing part of IFMIF/EVEDA Project)

LIPAc Linear IFMIF Prototype Accelerator



Rokkasho

 **Injector + LEBT**
CEA Saclay



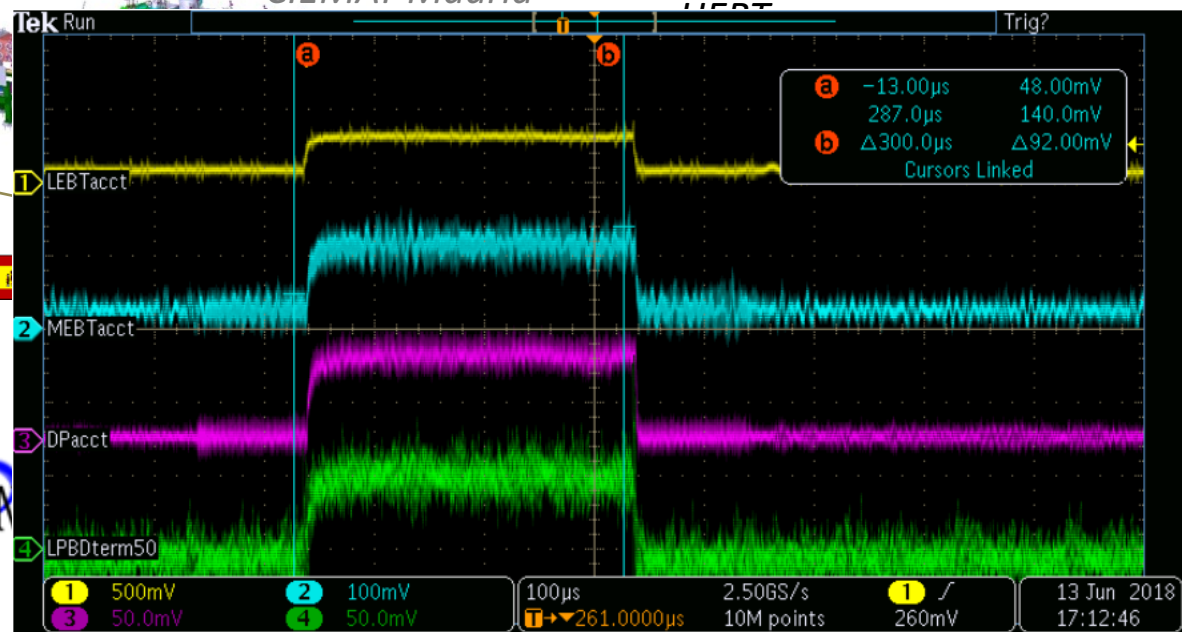
RFQ 
INFN Legnaro
JAEA 

 **MEBT**
CIEMAT Madrid

 **SRF Linac**
CEA Saclay
CIEMAT Madrid

 **Diagnostics**
CEA Saclay
 CIEMAT Madrid

 **Cryoplant**
CEA Saclay



Mission

○ Fusion - oriented

- Generate materials irradiation test data for design, licensing, construction and safe operation of the fusion demonstration power reactor (DEMO)
- Generate a data base for benchmarking of radiation responses of materials hand in hand with computational material science.

○ General uses of high-energy neutrons

- Applications of medical interest – isotope production
- Nuclear physics
- Basic physics
- Industrial application of neutrons

A neutron flux of $\sim 10^{14} \text{ cm}^{-2}\text{s}^{-1}$ is generated with neutron spectrum up to 50 MeV energy

DONES SITE LOCATION

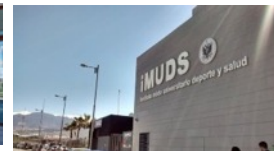
It is located in the Granada province (Andalusia region – southern Spain), 18 km southwest from Granada city in the Granada Metropolitan park (Escúzar).





Granada: University City

- >300 research groups,
- Top research : Computer Science, Health, Engineering, Physical, Mathematics, Sport Science, Chemistry, Materials, Geology..
- >12 research institutes
- **More than 50 spin-offs**, 27 of them TIC.
- **High degree of internacionality**: >4.000 ERASMUS students per year (Leader in Erasmus Program)
- **High Reputation with high quality research**:
 - **TOP 300 Shangai Ranking**
 - **2nd university in Spain**
 - **1st University in TIC in Spain**
 - **TOP 50 in TIC Shangai Ranking**



Granada: Living Conditions

-one of the most **historic** and **culturally rich** urban centers in the world



-Its **geography is extremely rich and varied**: the maritime coast and the valleys and mountains offer **many recreational Opportunities**.

NATIONAL PARK OF SIERRA NEVADA: Biosphere Reserve



Last comment

The proposal to implement DONES is the missing link to develop nuclear fusion as an electricity producing source while opening a new research infrastructure to the wide scientific community!

Thank you!

