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## **NFS : A neutron facility at SPIRAL-2**

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The “Neutrons for Science”(NFS) will one of the SPIRAL-2 experimental areas. NFS, expected to be operational in 2012, will be composed of a pulsed neutron beam for in-flight measurements and an irradiation station for activation measurements and material studies.

The beams delivered by the high-power superconducting driver LINAC of the SPIRAL-2 facility will allow producing intense pulsed neutrons sources in the 100 keV-40 MeV energy range. Thick C and Be converters and deuteron beam will produce an continuous neutron spectrum while thin  ${}^7\text{Li}$  target and proton beam allow to generate quasi-mono-energetic neutrons.

NFS will be a very powerful tool for physics, fundamental research as well as applications like the transmutation of nuclear waste, design of future fission and fusion reactors, nuclear medicine or test and development of new detectors. Several “Day-one experiments” in these fields have already been evaluated by the scientific Advisory Committee of SPIRAL-2.

We will described the facility, give the characteristics and some examples of the first potential experiments

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