

The Neutrons For Science Facility at GANIL/SPIRAL-2

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The NFS (Neutrons For Science) facility at Ganil in Caen (France) offers neutron beams from 1 to 40 MeV with fluxes unique in the world. The neutrons are produced by p+Li or d+Be reactions thanks to the beams delivered by the SPIRAL-2 linear accelerator. The resulting collimated and pulsed neutron beam allows several experiments to be performed simultaneously. In addition to the neutron beam, an irradiation station and a pneumatic sample transfer system allow cross section measurements by activation technique for neutron or ion induced reactions. The facility has been in operation since 2021 and several experiments have been performed to study neutron induced reactions such as fission, production of light charged particles, (n,xng) cross section measurements or nuclear structure studies. Excitation function measurements of proton, deuteron or alpha induced reactions have also been performed. Finally, production tests of At211, an alpha emitter for medical applications, have been successfully performed. During this talk, the NFS installation will be presented and its technical characteristics will be developed. Some of the experiments already performed will then be shown.

Author: LEDOUX, Xavier

Orateur: LEDOUX, Xavier

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