

Seminar general

Nuclear Physics Experiments at Institut Laue-Langevin

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Institut Laue-Langevin (ILL) in Grenoble (France) is an international user facility that exploits a high flux reactor as powerful neutron source. Most of the about 40 instruments served by these intense neutron beams exploit neutron scattering for studying questions in condensed matter physics, chemistry, biology, materials science, etc. However, there are also some unique instruments serving nuclear physics.

The recoil separator LOHENGRIN is used for high resolution fission studies and nuclear spectroscopy of neutron-rich nuclides, the crystal spectrometer GAMS enables gamma ray spectroscopy with ultrahigh (ppm) energy resolution and the new FIPPS instrument serves for prompt $\gamma\gamma$ and $\gamma\gamma\gamma$ spectroscopy with (n, γ) and (n,f) reactions. Experiments on (n,p) and (n, α) reactions and fission are also performed at the multi-purpose beam PF1b.

Moreover, high flux irradiation positions (neutron flux up to 1.5×10^{15} n.cm $^{-2}$ s $^{-1}$) are used to produce radioisotopes with high specific activity for medical applications and fundamental research.

Examples of recent and future applications of these instruments will be discussed.

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Sala de seminar Marius Petrașcu, DFN - TANDEM