

# eurorib'10

Contribution ID: 91

Type: invited

## GANIL-SPIRAL2: a new era at the dawn of a new decade

Wednesday, 9 June 2010 09:00 (30 minutes)

GANIL-SPIRAL2: a new era at the dawn of a new decade

### Abstract:

GANIL presently offers unique opportunities in nuclear physics and many other fields that arise from not only the provision of low-energy stable beams, fragmentation beams and re-accelerated radioactive species, but also from the availability of a wide range of state-of-the-art spectrometers and instrumentation. With the construction of SPIRAL2 over the next few years, GANIL is in a good position to retain its world-leading capability even though it faces strong competition from new and upgraded ISOL and fragmentation facilities. As selected by the ESFRI committee, the next generation of ISOL facility in Europe is represented by the SPIRAL2 project to be built at GANIL (Caen, France). SPIRAL 2 is based on a high power, CW, superconducting LINAC, delivering 5 mA of deuteron beams at 40MeV (200KW) directed on a C converter+ Uranium target and producing therefore more 10<sup>13</sup> fissions/s. The expected radioactive beams intensities in the mass range from A=60 to A=140, will surpass by two order of magnitude any existing facilities in the world. These unstable atoms will be available at energies between few KeV/n to 15 MeV/n. The same driver will accelerate high intensity (100A to 1 mA), heavier ions (Ar up to Xe) at maximum energy of 14 MeV/n.

*In applied areas SPIRAL2 is considered as a powerful variable energy neutron source. The Neutrons For Science collaboration (NFS) is proposing a physics program on fission induced by fast neutrons as well as fusion studies on materials.*

*Under the 7FP program of European Union called Preparatory phase\*, the SPIRAL2 project has been granted a budget of about 4M€ to build up an international consortium around this new venture. The status of the construction of SPIRAL2 accelerator and associated physics instruments in collaboration with EU and International partners will be presented*

In addition, in order to ensure that the existing GANIL-SPIRAL1 facility makes best use of available resources, a study of the prospects for the laboratory has been undertaken, which will address its likely needs for the scientific programme up to 2015.

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**Session Classification:** Facility Talks I