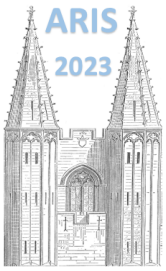

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The Future of the GANIL facility

vendredi 9 juin 2023 11:45 (20 minutes)

The first experiment performed at GANIL (Grand Accélérateur National d'Ions Lourds) was scheduled 40 years ago to study the reactions induced by a 44 MeV/u Ar beam on Ni and Au targets through the mass, charge and energy distributions of the fragments. The projectile fragmentation was found to be the dominant process at this intermediate energy and this pioneer work paved the way to the successful studies of exotic nuclei performed at GANIL in the domain of halo nuclei, magic numbers, exotic radioactivities among others⋯
In the years 2000, the SPIRAL1 facility gave access to ISOL type beams mainly for light and medium masses nuclei whereas the new SPIRAL2 facility will, in the coming years with S3 and DESIR, open unique opportunities for the study of medium and heavy N=Z nuclei and superheavy nuclei. In addition to nuclear physics experiments, many studies are performed in the domain of interdisciplinary researches such as atomic physics, material science, medical science, biology⋯Part of the beam time is also dedicated to industrial applications.
In 2020, the GANIL scientific community participated to the national prospectives that produced the "French roadmap for Nuclear, Particle and Astroparticle physics, and associated technical developments and applications". In the framework of the national landscape, particular focus was done on the future of the GANIL facility that has also been afterwards intensively discussed in the frame of a committee of international experts. Four major objectives have been expressed: i- the study of neutron rich fission fragments requiring to construct a dedicated production building; ii- a post-acceleration for the radioactive ions up to 150 MeV/u; iii- the study of electron scattering on radioactive ions and iv- the increase of beamtime for the interdisciplinary activities and industrial applications. We are now in the process of starting a preliminary project in order to define possible scenarios that will account for the four aforementioned objectives. The ARIS conference will be a unique occasion to discuss these objectives with international experts.

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