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Status of S3 and possible studies on spontaneous fission

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The in-depth study of the regions of Superheavy elements and the proton dripline around 100Sn are two major challenges of today's Nuclear Physics. Performing detailed spectroscopic studies on these nuclei requires a significant improvement of our detection capabilities. The Super-Separator-Spectrometer S3 is part of the SPIRAL2 facility at GANIL. Its aim is to use the high stable beam currents provided by the new LINAC to reach rare isotopes by fusion-evaporation.

S3 is designed to provide the best rejection power along with a high transmission and a mass resolution of around 400. The use of high-acceptance superconducting multipoles provides a high transmission thanks to large gaps and higher-order optical corrections. These features, connected to a high-power target station, will provide access to nuclei with fusion-evaporation cross-section down to the picobarn region and below.

This presentation will describe the technical capabilities of S3 and give a status of the construction of all systems and its commissioning plan. An overview of the Physics Cases planned for the first experiments will also be given with a focus on the study of spontaneously fissioning systems.

Type of contribution

Regular Abstract

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