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# The SPES Exotic Beam ISOL Facility: Status of the Project, Technical Challenges, Instrumentation, Scientific Program

*Wednesday 25 October 2017 08:30 (30 minutes)*

SPES (Selective Production of Exotic Species) is the INFN project for a Nuclear Physics facility with Radioactive Ion Beams (RIBs). It is in advanced construction in Legnaro, with several technological innovations and challenges foreseen, comprehensive of new achievements and improvements.
SPES will provide mostly neutron-rich exotic beams derived by the fission fragments (1013 fiss/s) produced in the interaction of an intense proton beam (200 microA) on a direct UCx target. Several other targets will be developed to provide users a large beam selection. The expected SPES beam intensities, their quality and, eventually, their maximum energies (up to 11 MeV/A for A=130) will permit to perform forefront research in nuclear structure and nuclear dynamics, studying a region of the nuclear chart far from stability. This goal will be reached by coordinating the developments on the accelerator complex and those of up to date experimental set ups.
The schedule of the project is organized so to give low energy beams (1+ species at 40 keV) at the beginning of 2019, while post accelerated beams up to the maximum energies (around 10-11 MeV/n) are foreseen in 2021, after the installation of the newly developed RFQ new injection system for the ALPI post accelerator.
The technical design and the installation phases will be described, followed by the description of some challenging arguments in the Nuclear Physics program to be performed at the Legnaro National Laboratory.

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