The DESIR facility at SPIRAL2

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The DESIR [1] collaboration proposes the construction of an experimental facility to exploit the low-energy beams from SPIRAL1, SPIRAL2 and S3.

The high degree of purity required to push experiments towards the limits of stability will be achieved by the implementation in the SPIRAL2 production building of a high-efficiency RFQ cooler and buncher coupled to a high-resolution mass separator. Beams from the low-energy branch of S^3 and from SPIRAL1 will allow to perform complementary studies of refractory elements produced by means of fusion reaction as well as of light and intense exotic beams, respectively.

The physics case of DESIR is very diverse and includes experiments in nuclear physics as well as in fundamental weak-interaction physics and in astrophysics. The facility will allow to perform experiments using laser spectroscopy techniques, decay spectroscopy of radioactive species, mass spectrometry and other trap-assisted measurements.

We will describe the physics cases that will be addressed at DESIR and which were developed in the Letter of Intent for the DESIR facility in October 2006 [2], the instruments needed to investigate the physics cases as presented in the technical design study prepared in December 2008 [3] and describe the advancement of DESIR.

References

[1] www.cenbg.in2p3.fr/desir
[2] http://www.cenbg.in2p3.fr/desir/IMG/pdf/DESIR_LOI_SHORT.pdf
http://www.cenbg.in2p3.fr/desir/IMG/pdf/DESIR_LOI_LONG.pdf
[3] http://www.cenbg.in2p3.fr/desir/IMG/pdf/DESIR-Technical-Proposal-V090105.pdf