

# **A SC linac for the energy upgrade of REX-ISOLDE at CERN**

M. Pasini<sup>1</sup>, M. Lindroos<sup>1</sup>, M. Vretenar<sup>1</sup>, F. Wenander<sup>1</sup>, P. Delahaye<sup>2</sup> D. Voulot<sup>3</sup>

<sup>1</sup> *AB departement, CERN, CH-1211 Genève, Switzerland*

<sup>2</sup> *PH departement, CERN, CH-1211 Genève, Switzerland*

<sup>3</sup> *Department für Physik, LMU München, D-85748 Garching, Germany*

The development of the physics program with Radioactive Ion Beams (RIB) for the REX-ISOLDE [1] facility at CERN demands for an upgrade in energy and beam quality. The energy upgrade will happen in two stages; in a first stage the final energy will be limited to 5.5 MeV/u while for the second stage the required final energy will be 10 MeV/u. In order to fully exploit all the potential of the physics experiments and to improve the beam quality, a dedicated superconducting linac has been proposed. The superconducting technology can guarantee the largest flexibility of the machine in terms of energy, energy spread and phase spread, so it can fit all the required beam properties to be delivered to the experiments. Beam quality improvements is also assured because of the larger acceptance with respect to a normal conducting linac. We report here on the study of the SC linac that has been proposed.

[1] CERN-INTC-2005-21;