

A new ISOLDE building and target stations

Wednesday 25 November 2020 09:00 (20 minutes)

Over the last 25 years the ISOLDE facility has grown steadily with adding extensions to the hall to house new experiments as well as the post-accelerator REX and the HIE ISOLDE super conducting linac and its HEBT lines. On the target zone and radioactive laboratory side the facility has extended with a Class A lab and MEDICIS and lately the nano Lab.

We now reached a situation where further expansion has become significantly difficult. The experimental hall is cramped and ISOLDE has reached the boundaries of its present area.

In the frame of EPIC and the upcoming upgrade of the proton beam to 2GeV and higher intensity as well as the growing number of new experiments, demand for parallel operation and higher efficiency in mind, we are looking into a possible whole new ISOLDE Low Energy facility at CERN close to the existing one so infrastructure such as the control room and DAQ rooms can be common. An ideal area is the space actually occupied by the recuperation building B133. The underlying unused tunnel infrastructure TT70 would serve to bring the proton beam to new underground target stations and a new hall above would house a large number of comfortable large experimental zones for Low Energy RIB experiments provided by the new target stations and separators. Future connections to the AD facility and n-Tof are possible opening up exciting new physics.

Another significant advantage is that construction of such a new ISOLDE facility would take place in parallel to the existing running ISOLDE Low Energy physics in the present experimental hall 170. After finalizing the new facility and the move of the Low Energy experiments from 170 to the new hall the existing hall 170 and its target stations would be fully dedicated to REX/HIE ISOLDE post-acceleration physics with even a possible compact future storage ring occupying the space in the existing experimental hall that would become free.

This presentation will show you the concept and feasibility of such a new ISOLDE building and target stations in the area of the TT70 tunnel and building 133.

Primary author: Mr SIESLING, Erwin (CERN ISOLDE Technical Coordination and Operation)

Co-authors: Dr RODRIGUEZ RODRIGUEZ, Jose Alberto (CERN ISOLDE Operation); Mr PEREZ-DUENAS, Eliseo (CERN Civil Engineering)

Presenter: Mr SIESLING, Erwin (CERN ISOLDE Technical Coordination and Operation)

Session Classification: A new ISOLDE building and target stations