Parallel SESSION 9.A: Accelerators for Nuclear Data Paper No. 154

STATUS REPORT OF THE N_TOF FACILITY AFTER THE 2ND CERN LONG SHUTDOWN PERIOD

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During the 2nd long shutdown period of CERN (2018-2020) important upgrade activities were realized at the n_TOF facility at CERN. The most important one is the replacement of the lead spallation target, that served the facility for more than 10 years, with a new sliced and liquid-nitrogen-cooled lead target [1]. Additionally, by taking the advantage of the enhanced neutron flux at close distances with respect to the lead target, a new experimental area (NEAR) was established. In parallel new detection systems were developed towards to more efficient data taking.

Within the present contribution the n_TOF facility will be presented. First results with respect the neutron flux at the horizontal (EAR-1) and vertical (EAR-2) experimental areas will be given along with characterisation of the newly built NEAR station. The existing and recently developed instrumentation will be described by presenting selected physics cases of previous and future measurements [2, 3].

After its major upgrade during CERN's 2nd Long Shutdown, the n_TOF facility's unique characteristics were further improved and enhanced. As will be presented n_TOF can serve high precision cross-section measurements, in a wide energy range for a large variety of neutron induced reactions with stable or highly radioactive samples (e.g. [4]).

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