

Measurements with the Stripping Foil Test Stand in the Linac4 Transfer Line

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In 2020, after the CERN accelerators complex Long Shutdown 2 (LS2), a novel Linac4 (L4)-to-PS Booster (PSB) charge-exchange injection system will allow to transform the L4 160 MeV H⁻ beam into H⁺ which will be injected into the four PSB superposed rings. For this, a 200 µg/cm² carbon stripping foil will convert negative hydrogen ions (H⁻) into protons by stripping off the electrons. L4 is now performing operational reliability runs, which include a stripping foil test stand installed in the L4 transfer line. These tests will permit to gain experience on the fragile foils, test different foil materials and thicknesses, measure the efficiency and lifetime of the foils, and evaluate the foil changing mechanism as well as the interlocking functions. This paper briefly describes the stripping foil test stand setup, before reporting on the obtained important test results.

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