

ESSvSB Linac and Transfer Line: Lattice Design and Error Studies

Tuesday 7 September 2021 16:00 (20 minutes)

The ESS neutrino superbunch (ESSvSB) project is being studied as an upgrade to the European Spallation Source (ESS). This proposed upgrade consists of adding an H⁻ source to the existing beamline in order to send H⁻ pulses in between proton pulses, effectively doubling the beam power from 5 MW to 10 MW. In this contribution, we present the 2.5 GeV linear accelerator (linac) lattice and the design of the transfer line from the linac to the accumulator ring, where pulses would be stacked to achieve short proton pulses of high intensity. The results of error studies, quantifying the effect of accelerator imperfections on the beam transport through the linac and transfer line, are also presented.

Working group

WG3

Primary authors: BLASKOVIC KRALJEVIC, Neven (European Spallation Source); ESHRAQI, Mohammad (ESS - European Spallation Source (SE)); FOLSOM, Benjamin (European Spallation Source); GÅLNANDER, Björn (ESS ERIC)

Presenter: FOLSOM, Benjamin (European Spallation Source)

Session Classification: WG 3