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ESSnuSB target test facility

Tuesday 3 June 2025 16:00 (2 hours)

The ESSnuSBplus target station will consist of one target-horn system operating under an intense proton beam of 1.25 MW power, derived from the nominal 5 MW proton beam at 14 Hz frequency from the European Spallation Source (ESS) linac. The ESSnuSBplus target features a packed bed of titanium (Ti) spheres cooled with pressurized helium gas to withstand the substantial power deposition expected in the target bulk. The ESSnuSB Target Test Facility (ETTF) will be located in the Mechanical Measurements Lab (MML) at ESS. The ETTF setup is designed to investigate various aspects of cooling the Ti spheres with pressurized helium. Due to the granular structure of the target bulk, numerical CFD modeling of the thermodynamic behavior of the cooling system and target pellets is highly complex and necessitates experimental validation. The primary objective of this R&D setup is to address the challenges in simulating the mechanical and thermodynamic behavior of the target cooling system.
Current status of the commissioning of the R&D prototype target system and the results of the aforementioned studies will be presented.

Footnotes

Paper preparation format

Word

Region represented

Europe

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