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Status of the ESSnuSB neutrino beam and detector project

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It is proposed to use the uniquely powerful ESS proton linac to generate a very intense neutrino beam, concurrently with the ESS base-line spallation-neutron production, allowing measurements to be made at the second neutrino oscillation maximum where the sensitivity to leptonic CP violation is significantly higher than at the first maximum. The same detector will be used to detect neutrinos from supernovae and to search for proton decay. A 4-years EU-supported Design Study of this proposal was started in January 2018. The current status of the design of the linac power upgrade from 5 to 10 MW by adding H- pulses between the proton pulses, of the pulse accumulator ring used to compress the pulse length, of the 4-fold target station, of the near monitoring detector and of the far Megaton water Cherenkov detector.

Summary

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