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The European Spallation Source neutrino Super Beam ESSvSB

The European Spallation Source linear proton accelerator will have a uniquely high beam power of 5 MW to be used for spallation neutron production. The beam power can be raised to 10 MW by increasing the accelerator duty cycle from 4% to 8% and the additional 5 MW used to generate a uniquely intense neutrino Super Beam ESSvSB for measurement of leptonic CP violation. ESSvSB is complementary to other proposed Super Beam experiments by the fact that the resulting high neutrino-beam intensity makes it possible to locate the large water Cherenkov neutrino detector that will be used, at the second neutrino oscillation maximum, making the performance of ESSvSB for leptonic CP violation precision measurements highly competitive.

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