

Post-Acceleration Study for Neutrino Super-beam at CSNS

A post-acceleration system based on the accelerators at CSNS (China Spallation Neutron Source) is proposed to build a super-beam facility for neutrino physics. Two post-acceleration schemes, one using superconducting dipole magnets in the main ring and the other using room-temperature magnets have been studied, both to achieve the final proton energy of 128 GeV and the beam power of 4 MW by taking 10% of the CSNS beam from the neutron source. The main design features and the comparison for the two schemes are presented. The CSNS super-beam facility will be very competitive in long-baseline neutrino physics studies, compared with other super-beam facilities proposed in the world.

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