

**Beam Dynamics Design of a Proton Linac for the Neutron Science Project at JAERI,**  
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The Neutron Science Project at JAERI calls for a high intensity proton linear accelerator with an energy of 1.5 GeV and an average beam power of 8 MW. The front part of the linac, which consists of an RFQ and a DTL, uses normal conducting structures and the higher energy structure is superconducting (SC). The design and beam dynamics studies were performed with PARMTEQ and the modified version of PARMILA codes. An equipartitioned design approach was taken for the DTL and the SC sections for the lower longitudinal emittance growth. In this paper, choice of the design parameters and beam simulation results will be presented.