

A Computing and Detector Simulation Framework for the HIBEAM/NNBAR Experimental Program at the ESS

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The HIBEAM/NNBAR program is a proposed two-stage experiment for the European Spallation Source focusing on searches for baryon number violation via processes in which neutrons convert to anti-neutrons. This paper outlines the computing and detector simulation framework for the HIBEAM/NNBAR program. The simulation is based on predictions of neutron flux and neutronics together with signal and background generation. A range of diverse simulation packages are incorporated, including Monte Carlo transport codes, neutron ray-trace simulation packages, and detector simulation software. The common simulation package in which these elements are interfaced together is discussed. Data management plans and triggers are also described.

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