

Abstract Submitted
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The NNBAR Experiment KATHERINE DUNNE, Stockholm Univ —
Baryon number violating processes are one of the Sakharov conditions considered necessary to explain the matter-antimatter asymmetry in the universe, but are yet to be observed. The NNBAR experiment, planned to be housed at the European Spallation Source (ESS) will perform a search with free neutrons for neutron-antineutron oscillations ($\Delta B = 2$) with a gain in sensitivity of three orders of magnitude compared to the most recent search with free neutrons. NNBAR is a two-stage experiment which will begin with the first stage, termed HIBEAM, at which searches for neutron-sterile neutron oscillations ($\Delta B = 1$) will take place as well as detector validation and R&D for the second stage (to take place after 2030), which would search for neutrons converting to antineutrons. This talk will present the NNBAR experiment as well as ongoing work towards a prototype calorimeter at Stockholm University.

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