

HIBEAM at the ESS - status and plans

Friday 17 June 2022 11:00 (15 minutes)

In this talk I present the status of the “HIBEAM at the ESS” research project. The High Intensity Baryon Extraction and Measurement (HIBEAM) is the first stage of the two-stage experiment HIBEAM-NNBAR program and addresses major open questions in modern physics, in particular the origin of the observed matter-antimatter asymmetry and the nature of dark matter, with unique discovery potential, complementary to other world-wide experiments. The work comprises pre-studies, for the design of the HIBEAM instrument at the European Spallation Source (ESS). The two year program of work is split into four categories - beamline design and optimization, design and prototype of detectors for neutron-antineutron conversion searches, and the design of neutron detectors for dedicated sterile neutron searches. The work is funded with a VR RFI grant and brings together world-leading expertise from four Swedish institutes (Stockholm, Uppsala and Lund Universities and Chalmers Institute of Technology) and external scientists from the Institut Laue Langevin in Grenoble and Tennessee University, respectively. The project also involves the wider HIBEAM/NNBAR collaboration.

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