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The SHiP/NA67 experiment at the ECN3 high-intensity beam facility at the CERN SPS

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The SHiP/NA67 experiment is a general-purpose intensity-frontier experiment for the search for feebly interacting GeV-scale particles and to perform neutrino physics measurements at the HI-ECN3 (high-intensity) beam facility at the CERN SPS, operated in beam-dump mode, taking full advantage of the available 4×10^{19} protons per year at 400 GeV. The collaboration is currently optimising the experiment's initial configuration for the commissioning and first physics runs of 2032-2033.
The setup consists of two complementary detector systems downstream of an active muon shield: the scattering and neutrino detector (SND), which includes a light dark matter (LDM) neutrino target with vertexing capability. and the hidden sector decay spectrometer (HSDS), consisting of a 50 m long decay volume followed by a spectrometer, timing detector, and a PID system. BDF/SHiP offers unprecedented sensitivity to the decay and scattering signatures of various new physics models and to tau neutrino physics.

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