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The SHiP Experiment at CERN

SHiP is a new general purpose fixed target facility, whose Technical Proposal was reviewed by the CERN SPS Committee, who recommended that the experiment proceeds further to a Comprehensive Design phase. This recommendation was also endorsed by the CERN Research Board. In its initial phase, the 400GeV proton beam extracted from the SPS will be dumped on a heavy target with the aim of integrating $2x10^{20}$ pot in 5 years. A dedicated detector, based on a long vacuum tank followed by a spectrometer and particle identification detectors, will allow probing a variety of models with light long-lived exotic particles and masses below O(10) GeV/c^2. The main focus will be the physics of the so-called Hidden Portals, i.e. search for Dark Photons, Light scalars and pseudo-scalars, and Heavy Neutrinos. The sensitivity to Heavy Neutrinos will allow for the first time to probe, in the mass range between the kaon and the charm meson mass, a coupling range for which Baryogenesis and active neutrino masses could also be explained. Another dedicated detector will allow the study of neutrino cross-sections and angular distributions. tau neutrino deep inelastic scattering cross sections will be measured with a statistics 300 times larger than currently available, with the extraction of the F_4 and F_5 structure functions, never measured so far and allow for new tests of lepton non-universality with sensitivity to BSM physics. This second detector will also allow direct dark matter detection produced in the decay of the dark photons

I intend to submit my contribution for the proceedings

Yes

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