



Contribution ID: 92

Type: talk

SHiP: a new facility with a dedicated detector to search for new long-lived neutral particles

Friday, July 24, 2015 5:45 PM (12 minutes)

SHiP is a new general purpose fixed target facility, whose Technical Proposal has been recently submitted to the CERN SPS Committee. In its initial phase, the 400GeV proton beam extracted from the SPS will be dumped on a heavy target with the aim of integrating 2×10^{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 a few GeV/c^2 . The main focus will be the physics of the so-called Hidden Sector, 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. Direct detection of light and long-lived SUSY particles, such as RPV neutralinos and pseudo-Dirac gauginos could also be performed in an unexplored parameter range.

additional information

Technical Proposal CERN-SPSC-2015-016 (SPSC-P-350) <http://cds.cern.ch/record/2007512>

Primary author: GRAVERINI, Elena (Universitaet Zuerich (CH))

Presenter: GRAVERINI, Elena (Universitaet Zuerich (CH))

Session Classification: Higgs and New Physics

Track Classification: Higgs and New Physics