

The RPC technology in the SHiP experiment

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SHiP (Search for Hidden Particles) is a new experiment proposal designed to search for particles foreseen in many extensions of the Standard Model and to study neutrino physics. The experiment plans to use the high-intensity SPS proton beam at CERN, dumping in five years 2×10^{20} protons on a heavy target. A hadron absorber and a muon sweeper are located downstream of the target to reduce down to less than 10^5 muons the output of each 1s-long proton spill. In such a clean environment, a neutrino detector is located to study in particular tau neutrino physics and to observe the interactions with atoms of new particles. Downstream of the neutrino detector, a decay vessel is located to let these new particles decay and a detector is on purpose located downstream of the vessel. The two detectors located in front and downstream of the decay vessel plan to use for different purposes the RPC technology. We will revise the SHiP physics potential and the role played by the RPCs, including a status report of the technology choice done for a few prototype chambers under development. These prototypes will be used for the measurement of the charm cross-section in 400 GeV proton interactions, planned at the SPS in Summer 2018.

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