

PRISM system - status and challenges

The PRISM system was proposed to provide high intensity and high quality muon beams for next generation lepton flavour violation experiments. In PRISM such beams can be produced by sending a short proton pulse to a pion production target, capturing pions and performing RF phase rotation on the resulting muon beam in an FFAG ring. This paper presents the current status of the PRISM design obtained by the PRISM Task Force. The baseline design is reviewed and necessary modifications dictated by the injection/extraction are discussed. Several alternative designs for the PRISM FFAG ring are also presented and their performance compared to the baseline one. The status of the design of injection/extraction systems and matching to the solenoid channels upstream and downstream of the FFAG ring are presented. The feasibility of the construction of the PRISM system and its challenges are discussed.

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