

The Initial Study of a Compact Beam Line for the Mu3e Experiment

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The Mu3e experiment is dedicated to the search for the lepton flavor violating decay $\mu^+ \rightarrow e^+ e^+ e^-$. The experiment will be undertaken at the Paul Scherrer Institute (PSI). The first phase of the experiment will be located in the PiE5 area, currently used by the MEG experiment. In order to accommodate both experiments, without compromising on the physics performance of the Mu3e experiment, a compact beam line solution is necessary. The talk is dedicated to presenting a first design solution for the beamline. An overview of the beam requirements and the spatial constraints will be given. Finally, the transport matrix calculations as well as tracking calculations will be presented and discussed.

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