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Testbeam measurements and realistic simulation for straw drift tubes

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Trackers build of straw drift tubes are a perfect solution for precise track measurements in High Energy and Neutrino Physics experiments operating at low and moderate event rate. Straw Trackers will play crucial roles in such future detectors as Near-Detector Complex of the DUNE experiment, Hidden Sector Detector of the SHiP experiment and the SPD detector. Performance requirements on a Tracker and its readout electronics are defined by the Physics goals. Proper evaluation of the designed Tracker performance demands realistic simulation and studies with tracker prototypes. Preliminary results of the muon beam measurements done with straw tube chambers at the SPS test beam line are compared to predictions obtained with Garfield simulation package interfaced to LTSpice program for electronics circuit modelling.

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