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The Silicon Tracking System of the E16 experiment at J-PARC: commissioning and results from the test beam

The J-PARC E16 experiment has the goal to search for signatures of the spontaneously broken chiral symmetry and its (partial) restoration, through the study in-medium modification of the vector mesons, particularly the phi meson, decaying via di-electron channel, with a high intensity 30 GeV proton beam interacting with C and Cu targets at rates up to 10 MHz. For this purpose, the experiment will use modules constructed using the same technology and procedures as the modules of the Silicon Tracking System (STS) of the CBM experiment.

A total of 10 modules were assembled, tested, characterized and then installed in the E16 detector setup. The detector was commissioned in a beam test experiment at Tsukuba, where the detector modules could be exposed to a 3 GeV electron beam. In preparation for the beam test the detector were characterized and calibrated and performance studies were accomplished to asses the quality of the setup.

This work will show the results of the commissioning and operation of the E16 modules, as well as the status of the data analysis.

Category

Experiment

Collaboration (if applicable)

CBM and J-PARC E16 collaboration

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