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Development of a new beam position detectors for NA61/SHINE experiment.

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NA61/SHINE is a fixed-target experiment located at CERN Super Proton Synchrotron (SPS). The development of new beam position detectors is part of the ongoing upgrade of the detector system.

Two types of detectors have been manufactured and tested. The first one is a scintillating fibers detector with photo-multiplayer as a readout. The scintillating fibers detector consists of two ribbons, which are arranged perpendicularly to each other. Each ribbon is made of two layers of 250 μm diameter fibers. The grouping of fibers method was used, which allows using of a single multichannel photo-multiplayer for one detector.

The second type of detector is based on the single-sided silicon strip detector (SSD). In this project, Si strips produced by Hamamatsu (S13804) were used, where each strip has a width equal to 80 μm.

The developed detectors must meet several requirements: should work efficiently with proton and lead beams with beam intensity on the level of 100 kHz, the detector's material on the beamline should be minimized, the detectors should be able to determine the position of X and Y hit of each beam particle with maximum possible accuracy.

During the poster session I will present the results of our work.

Primary author: URBANIAK, Marta (University of Silesia in Katowice)

Presenter: URBANIAK, Marta (University of Silesia in Katowice)

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