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## Progress report on the development of a beam-beam collision monitor on microchannel plates

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In collider experiments, to select events that satisfy certain conditions, as well as to suppress the background from the interaction of the beam with the residual gas, it is necessary to accurately determine the time and location of the collision of nuclei. To solve these problems, it is proposed to use a beam collision monitor (FBBC) based on microchannel plates. For this purpose, within the framework of the Quartus software environment, simulation of time measurements for a fast collision monitor of particle beams based on chevron MCP assemblies was carried out. The measurement algorithm is based on the delayed coincidence method. A four-channel prototype of a multi-channel fast electronics module for timing reference to signals from MCP detectors using high-speed discrete comparators and a multi-channel time-code converter based on FPGA EPM240 from ALTERA has been developed and created. A prototype was tested using a 4-channel nanosecond pulse generator, with an adjustable delay between channels. It is shown that the calculated speed of the readout circuit coincides with the measured one and is no more than 10 ns for each event for a 4-channel system.

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