

Development of the SPD Beam-Beam Counter scintillation detector prototype with FERS 5200 front-end readout system.

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Abstract.

The Spin Physics Detector is an experiment at NICA designed to study the spin structure of the proton and deuteron and the other spin-related phenomena using polarized beams. The collision energy is up to 27 GeV and the luminosity is up to $10^{32} \text{ cm}^{-2} \text{ s}^{-1}$ in pp mode.

Two scintillator-based detectors, Beam-Beam Counters (BBC), will be installed upstream and downstream the interaction point and will serve as a tool for beam diagnostics including local polarimetry.

In this talk, we present the design of the BBC prototype based on the tiles with green WLS and SensL SiPM readout. FERS-5200 is used as the front-end readout system. The amplitude and timing resolutions for different tiles using radioactive source and cosmic rays are obtained.

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