

XXV International Baldin Seminar on High Energy Physics Problems  
"Relativistic Nuclear Physics and Quantum Chromodynamics"



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*Relativistic Nuclear Physics & Quantum Chromodynamics*

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## Materials selection of the SPD Beam-Beam Counter scintillation detector prototype

*Friday, 22 September 2023 12:20 (20 minutes)*

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. Two endcap detector wheels of scintillator-based Beam-Beam Counters (BBCs) will be installed symmetrically aside from the interaction point and will serve as a tool for beam diagnostics including local polarimetry.

In this talk, we present the materials selection using scintillation tiles with different material combinations of the BBC prototype. The influence of the light collection was studied using matte and covered with Tyvek tiles. Different fibers (Saint Gobain BCF91AS, BCF92S, and Kuraray Y-11), as well as different optical cements (CKTN mark E, OK-72) were used. The prototype was tested with cosmic rays and radioactive source using SensL SiPM readout.

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