

Test Zone of NICA SPD experiment at extracted beams of Nuclotron (JINR). MARUSYA facility

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The first stage of construction and putting in operation of the SPD Test Zone was completed in 2022. The Test Zone allows one to produce secondary particle beams (such as mesons, muons, electrons, protons, light nuclear fragments) in a momentum range from 400 to 2500 MeV/c with particle type, momentum, and interaction point identification. First experiments on investigation of SPD beam-beam counter based on microchannel plates using extracted and circulating beams of Nuclotron were performed. Prototypes of various beam detectors for calibration and testing were developed. The detectors include fiber hodoscopes, ionization chambers, scintillation and Cherenkov counters. Problems of non-destructive beam diagnostics using MCP-based detectors are discussed. The developed detectors were used at the Booster and Nuclotron $^{124}\text{Xe}^{54+}$ beams with energies of up to 3.5 GeV/nucleon in 2022-January 2023.