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## **PP –and DD –scattering simulation for Beam–Beam Counter of the Spin Physics Detector**

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The results of simulation of proton-proton and deuteron-deuteron scattering at total collision energies of  $\sqrt{s} = 6$  and 10 GeV in the SPDRoot framework are presented. Based on the simulation of elastic and inelastic scattering processes, the possibility of selecting the pp and dd elastic scattering events using beam-beam counters is discussed. The results for the two well-known event generators, FRITIOFF and Pythia8, are compared. The simulation shows that the background contribution increases with increasing energy. For the maximum considered energy, the acceptable background level can be achieved only for the central rings.

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