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Study of the strength and adiabatic passage of an integer resonance γG=3 using Nuclotron internal beam polarimeter

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Spin resonances in an accelerator can significantly affect the polarization of the particle beam during the acceleration cycle. To monitor the evolution of polarization and to understand the acceleration dynamics in real time, a reliable polarimeter is essential. DSS polarimeter at the Nuclotron Internal Target Station is a suitable instrumentation for this purpose. Its performance and efficiency were evaluated for *pp*-elastic scattering through comprehensive Monte-Carlo simulations using the Pluto event generator in the vicinity of the integer resonance $\gamma G = 3$. The results confirm that the existing polarimeter can provide valuable diagnostic information with acceptable efficiency over a significant energy range of about 100 MeV.

Primary author(s) : VOLKOV, Ivan (LHEP JINR)

Co-author(s) : ET AL.

Presenter(s) : VOLKOV, Ivan (LHEP JINR)

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