

Beam Induced Depolarizing Resonances in the HERMES Hydrogen/Deuterium Target

Davide Reggiani

Nuclear polarized hydrogen and deuterium gas targets employed in high-energy storage rings have become an important tool in the study of spin dependent processes in nuclear and particle physics. A potentially serious practical consideration in the use of this type of targets in bunched beams is the nucleon depolarization which can take place when the transient magnetic fields generated by the beam interact with the polarized nucleons and change their spin state. These depolarization process can be studied experimentally with a fully operational target installed in a storage ring.

This is the case of the HERMES target (at HERA - DESY) where this effects have been extensively studied in the past with H and D longitudinally polarized respect to the incoming lepton momentum. In the presentation besides of the results related to the past longitudinal running, the new problematics related to the present running with transversally polarized H will be addressed.