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Storage Cell Tests for the Polarized Target at LHCb

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T-shape cells fed with polarized hydrogen or deuterium atoms were used at several storage rings like COSY, DESY or IUCF to serve as polarized internal targets. To avoid polarization losses of the stored atoms, e.g. by recombination into molecules, different surface materials are used to solve these problems. For example, aluminum with its ceramic monolayer of aluminum oxide, Teflon or a water ice surface are successfully used. But these surface materials are not allowed for the coming polarized storage cell target at LHCb due to vacuum reasons or possible beam problems. The only allowed material so far would be an amorphous carbon coating, which has not been studied for possible depolarization effects so far. Corresponding experiments to investigate the recombination rate of polarized hydrogen atoms and the polarization preservation are under way at the research center in Jülich.

Category

Polarized Targets

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