Upgrade of the PAX H and D polarized internal target for precision measurements at COSY

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In order to accomplish to the needing of future experiments, the PAX collaboration \textsuperscript{1} is performing an upgrade of the polarized internal target presently installed at the COSY ring in Jülich (Germany).

The implementation of a new dual cavity will allow to switch from H to D and to measure the gas polarization without hardware change in a daily time. The introduction of an openable storage cell will increase the ring acceptance at injection and the intensity of the stored beam.

The new setup will be adopted in spin-filtering \textsuperscript{2} measurements as a mechanism to produce polarized antiprotons and in a recently proposed test of Time Reversal Invariance\textsuperscript{3} foreseen at the COSY ring.

In the report, the status of the development of the apparatus and the plans of the Collaboration will be illustrated.

References

