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Demonstrating the feasibility of a double-crystal fixed-target experimental physics setup through the TWOCRYST project in the LHC

Monday 2 June 2025 16:00 (2 hours)

The TWOCRYST proof-of-principle experiment at the LHC is an initiative to demonstrate the feasibility of a double-crystal setup for fixed-target physics experiments. Such a setup could enable spin precession studies of charmed baryons in the TeV energy range in the HL-LHC era. Major milestones in this project have recently been achieved, including the successful construction and testing of critical components such as the 4˜mm and 7˜cm long bent silicon crystals required, a new combined fixed-target and crystal goniometer for accurate angular positioning, and two Roman pot stations equipped with advanced tracking detectors. This contribution summarizes the status of the hardware, the results from the first machine development studies to prepare for the measurements with the crystals in 2025, and a detailed plan for the beam tests with the full TWOCRYST setup.

Footnotes

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