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## **Observation of channeling in bent crystals at the CERN LHC**

*Saturday 6 August 2016 18:00 (2 hours)*

UA9 collaboration is investigating the feasibility of a crystal-assisted collimation system for future high luminosity upgrade of the CERN LHC.

During a dedicated machine test in 2015, bent silicon crystals were exposed to a proton and an ion circulating beam.

Two high-accuracy goniometers equipped with one bent silicon crystal each were installed in the betatron cleaning insertion of the LHC during its long shutdown LS1.

Tests were performed with proton at injection energy (450 GeV/c) and at flat top (6.5 TeV/c), and with ion at injection energy (450 Z GeV/c).

The strong reduction of beam losses due to nuclear inelastic interactions of protons (or ions) in the aligned crystal in comparison with its random orientation was observed demonstrating the successful channeling of particles.

Measurements of cleaning efficiency of the crystal-based collimation system were also started.

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**Session Classification:** Poster Session

**Track Classification:** Accelerator: Physics, Performance, R&D and Future Accelerator Facilities