

# **Axial Channeling and Stochastic Deflection as Tools to Manipulate Trajectories of Charged Particle Beams**

*Wednesday, May 29, 2024 3:15 PM (12 minutes)*

When a charged particle beam closely aligns with the atomic axis of a crystal, the particles are confined within this axis. The crystal's bending, a result of this alignment, steers the beam's trajectory. Early attempts to observe this phenomenon experimentally were unsuccessful, but subsequent trials at CERN, based on the predictions of Grinenko and Shul'ga, have confirmed the effectiveness of axial channeling and stochastic deflection for beam steering. Initial tests were carried out with 400 GeV proton beams, and the technique has since been expanded to include negatively charged particle beams. This conference contribution will highlight the significant achievements in manipulating high-energy particle beams through axial channeling in bent crystals.

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**Session Classification:** Session VI

**Track Classification:** Electrodynamics of High Energy in Matter including Interactions of Particles in Bent Crystal