

Channeling 2018



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Dechanneling Population at Extreme Crystal Bending with 6.5 TeV Proton Beam

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The Crystal Collimation layout present in LHC provides, since 2015, a unique test stand for hadron beam manipulation at TeV energy. The two crystals installed in 2014 were used to investigate the performance of the crystal collimation system in LHC. The data collected were used to probe the channeling, and the other coherent effect related, of hadrons with bent crystal in this specific framework. In particular, the dechanneling population at low deflection angles is observed to be enhanced when the bending radius of one of the crystals is close to the critical radius at the LHC top energy. The interpretation of the data, also using simulations code, is presented. The conclusions are used to understand the observations in collimation cleaning measurements.

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