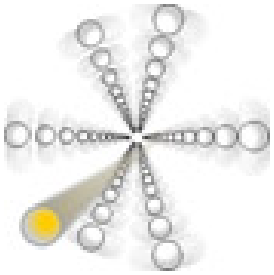

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Simulation of Crystal Assisted Collimation of the SPS Beam

Model for simulation of the crystal assisted collimation of the SPS beam halo and simulation results are presented. The impact parameters and angles of halo particles in the first hits with the crystal primary collimator are considered taking into account the measured oscillation amplitude growth. The model of the crystal with a miscut angle was developed. It was shown that the miscut angle of the available crystal produces an increase by more than two times of the beam halo losses in the crystal for its perfect alignment. The loss reduction obtained by simulation for the crystal with a miscut is closer to the measured value. Taking into consideration the interaction of halo particles with the secondary collimator-absorber allows formulating a criterion for selection of optimal crystal parameters and gap value between the crystal and absorber.

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