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Influence of crystal curvature on the angular distribution of channeled particles

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The quantum mechanical problem of the angular distribution of particles at the exit from a curved crystal is considered. Preliminary results have shown that the addition of a some perturbation to the average atomic potential leads to a deformation of the angular distribution function of channeled particles at the exit from a bent crystal. But the angular distribution function of channeled particles is still symmetrical with respect to the angle of rotation determined by the bending of the crystal. At the same time, channeled particles can leave the channel due to scattering by a perturbation of effective potential. Due to the presence of particles scattered by the perturbation of effective potential at angles exceeding the critical angle in the total function of angular distribution appears some asymmetry with respect to the rotation angle.

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