CALCULATION OF ION REFLECTION FROM SOLID

IN THE SMALL ANGLE APPROXIMATION

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If ion energy is much more than the surface binding energy then in every collision event the ions are scattered preferentially on small angles, and the collision integral in equation of transfer can be substituted by the angular Laplace operator. The small angle approximation gives opportunity to obtain solution of some reflection problems in analytical form /1–4/.

In the present work we generalized the result /2/ valid for the case of grazing ion incidence for the case of arbitrary incidence angles. The Figure shows angular distribution of reflected ions for incidence angles 00 (normal incidence, lower curve),600 and750 (upper curve). All distributions are normalized to their values at zero ejection angle. The last curve demonstrates the same cupola-like shape as theory /2/.

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