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On fast charged particles scattering in thin crystalline and amorphous targets

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The problem of fast charged particles scattering in a thin layer of crystalline and amorphous matter is considered [1]. There is suggested an approach that allows one to consider the process of scattering in such targets from a single point of view. The approach is based on the Born and Eikonal approximations of the quantum scattering theory [2]. In the case of scattering in a crystal, special attention is paid to the question of the cross section splitting into coherent and incoherent components and to the applicability conditions of the Born and Eikonal approximations for different orientations of the crystal axes and planes.

References
[1] N.F. Shul'ga, V.D. Koriukina. The Eikonal Approximation of the Scattering Theory for Fast Charged Particles in a Thin Layer of Crystalline and Amorphous Media. ArXiv preprint arXiv:1908.00935 (2019)
[2] A.I. Akhiezer, N.F. Shul'ga. High Energy Electrodynamics in Matter. Gordon and Breach Pub. Amsterdam. 1996

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