SPATIAL GENERATION OF ELECTRON EXCITATIONS ON THE X-RAY ABSORPTION

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Summary

We present a model of the spatial distribution of electron excitations which are generated during the deceleration of a high-energy photoelectron created under the X-ray quantum absorption in a medium. It is shown that the resultant distribution can be presented in a form of the analytic dependence on the medium parameters and the photoelectron energy. The obtained result has the large importance for the kinetics of X-ray conduction and X-ray luminescence, where the essential point is the consideration of the spatial inhomogeneity of excitations, and for the calculation of the spatial distribution of the X-ray fluorescence in a material during the irradiation by high-energy electrons.