THE CUMULANT ANALYSIS
OF THE DISTRIBUTION OF IMPLANTED IONS

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S u m m a r y

The method of analysis of the Lindhard—Scharff—Schiott (LSS) equations which was proposed earlier by the authors for the distribution of total ion paths is applied to the spatial distribution of implanted ions. The integral equations for eight first cumulants are obtained, and their solutions are calculated for one-component targets for ion energies from 100 eV to 1 GeV. The general features of the energy dependences of distribution parameters are found, and it is shown that a fitting of the distribution to experimental results can give essential correlated errors in the obtained parameters. The method allows one to take into account all the distribution moments in the determination of the form of atom-atom interaction.