

Complex Plasma in Narrow Channels: Impact of Confinement on the Local Order

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2D and 3D equilibrium configurations of the dust component of a complex plasma in narrow channels have been numerically simulated by the molecular dynamics method for various forms of the confinement potential such as the parabolic potential and potential well. The interaction between the charged dust particles is described by a screened Coulomb potential with allowance for the interaction of microparticles with a neutral gas. It has been shown that the form of the confinement potential strongly affects the local order of the microparticles in such a system.