

TO THE PROBLEM OF INFLUENCE OF CHARGING
PROCESSES ON THE GRAIN
SCREENING IN PLASMAS

T. Bystrenko, A. Zagorodny

Bogolyubov Institute for Theoretical Physics
(14b, Metrolohichna Str., Kyiv 03143, Ukraine)

Effects of charging processes on the effective screened field around a charged grain in plasma are studied within a linearized model of collisionless plasmas. It is shown that the above effects give rise to small contributions to the effective screened field predicted by the equilibrium linear screening theory within the rather wide range of plasma parameters typical of dusty plasmas. A considerable deviation from the linear screening theory is expected for larger grain sizes, of the order of the Debye length. The asymptotic behavior of effective potentials is considered.