

BOUNDARY INFLUENCE ON GRAIN SCREENING
IN SEMI-INFINITE PLASMA

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S u m m a r y

The screened potential of a single grain embedded into semi-bounded plasma is calculated. The limiting cases of a collisionless plasma and a plasma described in the drift-diffusion approximation are considered. We assume that plasma boundary does not absorb electrons and ions. The grain interaction with plasma particles is described within the “point sink model”. According to this model the singular sinks are introduced into the equations describing plasma dynamics. This makes possible to recover the screened potentials calculated in the case of unbounded plasma and to perform the appropriate calculations in the case of bounded systems. It turns out that the presence of boundary can considerably modify the screened potentials.