

GRAIN IN A PLASMA IN THE PRESENCE
OF EXTERNAL ELECTRIC FIELD: KINETIC
CALCULATION OF EFFECTIVE
POTENTIAL AND IONIC
DRAG FORCE

*A.G. Zagorodny¹, I.V. Rogal¹, A.I. Momot²,
I.V. Schweigert³*

¹Bogolyubov Institute for Theoretical Physics,
Nat. Acad. of Sci. of Ukraine
(14b, Metrolohichna Str., Kyiv 03143, Ukraine;
e-mail: AZagorodny@bitp.kiev.ua),

²Kyiv National Taras Shevchenko University,
Faculty of Physics
(2, Academician Glushkov Str., Kyiv 03680, Ukraine;
e-mail: momot@univ.kiev.ua),

³Institute of Theoretical and Applied Mechanics
(4/1, Institutskaya Str., Novosibirsk 630090, Russia;
e-mail: ischweig@yahoo.com)

S u m m a r y

Kinetic calculations of the effective grain potential are presented for the case of weakly-ionized plasma in the external electric field. The drag force associated with the ionic drift in the external field is found. It is shown that the absorption of electrons and ions by the grain can cause the change of the direction of the drag force.