

## PERMITTIVITY OF PLASMA IN RANDOM FIELDS OF MODERATE INTENSITY

*V.I. Zasenko<sup>1</sup>, A.G. Zagorodny<sup>1</sup>, J. Weiland<sup>2</sup>*

<sup>1</sup>Bogolyubov Institute for Theoretical Physics,  
Nat. Acad. of Sci. of Ukraine  
(*14b, Metrolohichna Str., Kyiv 03680, Ukraine*),

<sup>2</sup>Department of Electromagnetics,  
Chalmers University of Technology  
and Euroatom-VR Association  
(*41296 Göteborg, Sweden*)

### S u m m a r y

The permittivity of plasma in the electric field of random waves of moderate intensity is given in terms of the particle transition probability between two points of the phase space. The transition probability was found as an approximate solution of the Fokker–Planck equation. Validity of this analytical approximation was verified by the direct simulation of the particle diffusion in a field of random waves.