THE SPECTRUM OF THE CORRELATION FUNCTION FOR FLUCTUATIONS OF THE ANISOTROPY TENSOR OF A LAGRANGIAN LIQUID PARTICLE

O.I. Sakhnenko

Mechnikov Odesa National University
(*2, Dvoryans'ka Str., Odesa 65026, Ukraine;
e-mail: LSakhnenko@yahoo.co.uk*)

S u m m a r y

The spectrum of the correlation function (CF) for thermal hydrodynamic fluctuations of the anisotropy tensor of a liquid Lagrangian particle is studied in detail. Such a correlation function represents an asymptotic estimate for a molecular correlation function of orientational variables which is important for investigating the thermal motion of anisotropic liquid molecules. The Euler correlation function for the anisotropy tensor is obtained from the Langevin equations with random fluctuating fields of the velocity and its rotor. The corresponding Lagrangian correlation function was obtained on the basis of the approach proposed by N.P. Malomuzh.