DETERMINATION OF THE ONSAGER KINETIC COEFFICIENTS DESCRIBING THE DIFFUSION PROCESSES BY EXPERIMENTAL DATA ON EVAPORATION OF WATER DROPLETS

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S u m m a r y

On the basis of irreversible thermodynamics, we have obtained the analytical expression for the vapor diffusion flux on the evaporation of droplets in the diffusion mode. A method to find Onsager phenomenological coefficients defining the diffusion coefficient is proposed. Using the obtained theoretical expressions, we have analyzed the experimental data on the water droplet evaporation into a gas-vapor mixture (water vapor and buffer gas), where He, CH_3, Ne, air, Ar, CO_2 were used as buffer gases. The experiments were executed at temperatures of 283 and 293 K and relative humidities of 53 and 75%.