

Aerosol coagulation on nonlinear oscillations in a closed tube

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Abstract

Results of experimental investigation of nonlinear oscillations of an aerosol contained in a long closed tube are presented. Aerosol longitudinal oscillations were generated by a plane piston; a tube included a quartz section with phototransducer having permitted one to register light-penetrability of a medium that governs particle concentration. Dependences of coagulation time of droplets on frequency and intensity of oscillations were obtained for several frequency values including subharmonic resonance. Non-monotonous nature of a dependence of droplet coagulation time on frequency has been revealed with a minimum at a frequency of subharmonic resonance. It has been shown that as intensity of piston oscillation increases coagulation time of droplets. © 2003 WIT Press.
