

## **Resonance oscillations of an aerosol in a tube with a diaphragm in the shock free-wave mode**

Gubaidullin D., Zaripov R., Tkachenko L.  
*Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia*

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### **Abstract**

© 2014, Pleiades Publishing, Ltd. The results of experimental investigations of nonlinear oscillations of a finely dispersed aerosol in a tube with a diaphragm in the shock free-wave mode in the vicinity of resonance frequencies are presented. The frequency dependences of the peak-to-peak amplitude of aerosol pressure oscillations upon different internal diameters of the diaphragm are found. The time dependences of the numerical concentration of the oscillating aerosol droplets are presented. The effect of the frequency and amplitude of piston displacement and the influence of the diaphragm internal diameter on the aerosol clearing time are studied. It is shown that the clearing process of an oscillating aerosol is 5–10 times more efficient than natural deposition of aerosol.

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