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Directional diagrams of the particle drift in a standing wave with account of the basset force

Gubaidullin D., Osipov P., Zakirov A.

Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

Abstract

© 2015 Springer Science+Business Media New York. A study is made of the threshold parametric values at which the direction of the particle drift in a standing wave is reversed, with account taken of the Basset force at different Reynolds and Strouhal numbers. The dependences of the threshold value squared of the entrainment coefficient on the relative density of the particle with account and without account of the Basset force are found. The influence of the Basset force on the threshold value of the density parameter is investigated. It is shown that account taken of the Basset force exerts a particularly strong influence on the threshold curves for nondense particles. The threshold values of density of the particle and of the coefficient of its entrainment decrease as the Strouhal number increases.

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Keywords

Basset force, Forces in acoustic wave fields, Particle drift