

# NUMERICAL MODELING OF THE IMPACT OF SHOCK WAVE ON BUBBLY ENVIRONMENT

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**Abstract:** Based on the system of equations of two-phase compressible viscous flow the two-dimensional numerical simulation of penetration of the shock wave in water with air bubbles and its subsequent propagation in bubbly liquid under conditions simulating the experimental conditions of four different groups of authors has been performed. In calculations and experiments, the volumetric gas content of water varied from 0.5% to 19% with the air bubbles diameter of 2.0–2.5 mm and the shock wave velocity in the bubbly liquid varied in the range of 40–800 m/s. The results of calculations indicate that the mathematical model of two-phase flow describes properly the dynamics of the interaction of a shock wave with the bubbly liquid.

**Keywords:** bubbly liquid; shock wave; shock tube; numerical modeling

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