PROPAGATION OF A HETEROGENEOUS DETONATION WAVE IN A CHANNEL WITH EXPANSION

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Abstract: The propagation of a heterogeneous detonation wave in a stoichiometric mixture of aluminum particles and oxygen in a plane channel with linear expansion is investigated numerically. The angle of inclination of the wall to the axis of symmetry is varied in the range from 15° to 60°. The main flow regimes: subcritical, critical and supercritical are described and the maps of detonation regimes are constructed. The data obtained are compared with similar results for channels with a backward step.

Keywords: aluminum gas suspensions; detonation; channel with expansion

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