

STABILITY OF A SUPERSONIC FLOW PAST A WEDGE WITH ADJOINT WEAK NEUTRALLY STABLE SHOCK WAVE

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We study the classical problem of a supersonic stationary flow of a non-viscous non-heat-conducting gas in local thermodynamic equilibrium past an infinite plane wedge. Under the Lopatinskiĭ condition on the shock wave (neutral stability), we prove the well-posedness of the linearized mixed problem (the main solution is a weak shock wave), obtain a representation of the classical solution, where, in this case (in contrast to the case of the uniform Lopatinskiĭ condition — an absolutely stable shock wave), plane waves additionally appear in the representation. If the initial data have compact support, the solution reaches the given regime in infinite time.

Key words and phrases: weak shock wave, Lopatinskiĭ condition, (Lyapunov) asymptotic stability.

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