

APPLYING LAGRANGE'S APPROACH TO SOLVING A ONE-DIMENSIONAL PROBLEM OF WAVE PROPAGATION IN GAS IN LINEAR FORMULATION

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Samara State Aerospace University

Modelling of one-dimensional wave propagation in gas using various numerical schemes is discussed. Alongside the known schemes a scheme of solving an acoustics problem is proposed using Lagrange's approach to the description of environment motion. The results of numerical solution for three types of initial conditions are compared to those of analytical solution. Conclusions are drawn as to the applicability of the schemes discussed. The possibility of varying by step over the time without reducing the accuracy of the solution is shown.

Perfect gas, one-dimensional wave, numerical method, acoustics problem, "upstream" scheme, Godunov's method, Lagrange's approach, analytical solution.

Nikonov Valery Vladimirovitch, engineer of the Science-and-Technology Park "Aviatechnokon", Samara State Aerospace University, candidate of technical sciences, e-mail: v_nikonov@mail.ru. Area of research: vortex methods, direct numerical modelling of compressible and incompressible flows, boundary layer.

Shakhov Valentin Gavrilovitch, head of aerohydrodynamics department of Samara State Aerospace University, professor, candidate of technical sciences, e-mail: shakhov@ssau.ru. Area of research: boundary layer theory, turbulence, numerical methods, aircraft aerodynamics.