عنوان مقاله:

Numerical simulation of the mixing layer problem based on a new two-fluid turbulence model

نویسندگان:

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خلاصه مقاله:

The paper considers the simulation of the mixing of two flows with different velocities in a flat channel. The calculations are based on the numerical solution of a system of non-stationary equations using a two-fluid turbulence model. The results of longitudinal velocity and turbulent stress profiles in different sections of the channel are obtained. For the numerical implementation of the equations of turbulent hydrodynamics, the control volume method was used, and the relationship between velocities and pressure was found using the SIMPLE procedure. In this case, the convective terms in the equations were approximated by the difference against the flow of the second order of accuracy in an explicit way, and the diffusion terms were approximated by the central difference in an implicit form. To confirm the correctness of the obtained numerical results, a comparison was made with experimental data from the NASA database.

کلمات کلیدی:

Navier–Stokes equations, Two-fluid model, control volume method, turbulent stresses, SIMPLE method

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