
Numerical simulation of the subsonic separated flow axisymmetric bodies

© V.N. Timofeev, A.Ju. Bushuev

Bauman Moscow State Technical University, Moscow, 105005, Russia

Mathematical modeling of separated flow in axisymmetric bodies carried out on the basis of the concept of viscous- inviscid interaction. Considered moderate subsonic speed and flow regimes, in which the line of flow separation is close to the contour of the bottom section. For the numerical simulation of flow around bodies was used the method of discrete vortices. Studied axisymmetric flow around of the cylindrical bodies with head part ogival shape both in the presence and absence of the tapered tail part. The results of numerical calculation of the pressure distribution along the generator of the axisymmetric body with a tapered tail were compared with experimental data . For cylindrical bodies with ogival nose shape, but not having a tail part, the results of numerical study of the velocity distribution and the pressure on the rigid surface were submitted.

Keywords: *subsonic separated flow, mathematical simulation, method of discrete vortices.*

Timofeev V.N., Ph.D., Assoc. Professor of the Calculating mathematics and mathematical physics Department of Bauman Moscow State Technical University. Author of more than 40 scientific and methodical works. Research interests: mathematical modeling, numerical methods, mechanics of fluids, aerodynamics. e-mail: v_n_1951@mail.ru

Bushuev A. Ju., Ph.D., Assoc Professor of the Calculating mathematics and mathematical physics Department of Bauman Moscow State Technical University. Author of 20 scientific papers. Research interests: mathematical modeling techniques, methods of optimization and decision-making, numerical methods. e-mail: A.Ju.Bushuev@ya.ru
