On bottom area supersonic body flow problem

© N.M. Gordeeva

Bauman Moscow State Technical University, Moscow, 105005, Russia

The article offers the readers the author's findings in the field of movement dynamics and energy transfer for supersonic flow in bottom area. The investigation carried out by the author proves that the flow in bottom area heavily depends on the structure of boundary layer between trailing edge and attachment point along axial line, where the boundary layer detached from the trailing edge meets. The author has studied the effect of mass feed of gas to the bottom area from the surface of a body and bottom and heat exchange in the bottom area. The author obtained solution for the problem of near-wake flow behind axisymmetric body without taking into consideration recirculation at limited distance from the stern.

REFERENCES

[1] Sidnyaev N.I. *Vestnik MGTU imeni N.E. Baumana. Ser. Mashinostroenie — Herald of the Bauman Moscow State Technical University. Mechanical Engineering,* 2006, no. 2(63), pp. 17–34.

[2] Sidnyaev N.I. *Izvestiya vuzov. Aviatsionnaya tekhnika — Institutes of Higher Education Proceedings. Aviation Engineering*, 2006, no. 2, pp. 32–36.

[3] Sidnyaev N.I. Study of heat and mass transfer for hypersonic flow past a complex body of revolution. *Thermophysics and Aeromechanics*, 2006, vol. 13 (1), pp. 2–16.

[4] Sidnyaev N.I. Pressure distribution along the surface of combined bodies streamlined by a hypersonic flow. *Technical Physics Letters*, 2006, vol. 32 (7), pp. 564–566.

[5] Sidnyaev N.I. *Pis'ma v zhurnal tekhnicheskoi fiziki — Letters to the Journal of Applied Physics*, 2013, vol. 39, no. 8, pp. 17–24.

[6] Bosnyakov S.M., Vlasenko V.V., Kursakov I.A., Mikhailov S.V., Kvest Yu. *Uchyonye zapiski TSAGI — TsAGI Science Journal*, 2011, no. 3, pp. 25–40.

[7] Kovalenko V.V, Kravchenko A.I, Starukhin V.P, Schennikov S.A. *Uchyonye zapiski TSAGI — TsAGI Science Journal,* 1987, vol. 17, no. 6, pp. 23–29.

[8] Voevodin A.V., Prysev B.F. *Uchyonye zapiski TSAGI — TsAGI Science Journal,* 2008, vol. 39, no. 1–2.

Gordeeva N.M. graduated from Lomonosov Moscow State University in 1990. Assistant at the Higher Mathematics Department of Bauman Moscow State Technical University. Author of 6 publications in the field of applied maths and mechanics. e-mail: nmgordeeva@bmstu.ru