TO THE READERS

S. L. Chernyshev

Central Aerohydrodynamic Institute (TsAGI), 1 Zhukovsky str., Zhukovsky, 140180, Moscow Region, Russia; E-mail: slc@tsagi.ru

We offer you two special issues of *TsAGI Science Journal* for 2010 (No. 1 and No. 2) which contain papers prepared from presentations at The 2nd Open All-Russian Conference, Computational Experiments in Aeroacoustics (24–27 September 2008). The Computational Experiments in Aeroacoustics conferences have taken place since 2006 in the second half of September in the Svetlogorsk, Kaliningrad, region once every 2 years, alternating with traditional conferences on aviation acoustics carried out by TsAGI in Zvenigorod. The Institute of Mathematical Modeling of RAS is the initiator of the Computational Experiments in Aeroacoustics conferences, and the corresponding member of RAS, B. N. Chetverushkin, is the convener.

In 2008 the organization and hosting of the conference was actively supported by TsAGI. It was included in its list of scientific events, coinciding with the 90th anniversary of the Institute. A large group of TsAGI scientists, headed by the director, took a direct part in the conference.

The conference is traditionally attended by representatives from the RAS institutes (Institute of Mathematical Modeling, Keldysh Institute of Applied Mathematics, Institute of Numerical Mathematics, Institute for Safety Development of Atomic Energy, Institute for Problems in Mechanics, Khristianovich Institute of Theoretical and Applied Mechanics, Siberian Branch of RAS), from higher education institutions (Moscow State University, named after M. V. Lomonosov, Moscow Institute of Physics and Technology, St. Petersburg State Polytechnical University, Russian State University, named after I. Kant), leading research institutes (TsAGI, CIAM named after P. I. Baranov, TSNIIMASH), as well as scientific production associations and experimental design offices (EDO "Tupolev", Sukhoi Company, Mil Moscow Helicopter Plant, NPO "Saturn", Perm Engine Company "Aviadvigatel", NPO "Rubin"). In 2008 the conference received the status of "Open All-Russian Conference", which allows foreign representatives to participate.

Computational aeroacoustics (CAA) is a quite new area of computational aerodynamics which started to develop in the second half of the 1990s. Understanding the difficult problems associated with the numerical simulation of the processes of aerodynamic sound generation, of its propagation in nonuniform moving mediums, and of its

interaction with flow became the reason for the separation into this independent area of knowledge. Application of numerical methods for solving the aeroacoustics problems resulted in additional difficulties which do not have an analogue while solving the traditional problems of aerodynamics. Resolution of difficulties arising in aeroacoustics is precisely the subject of this new direction of study.

The idea of creating conditions for closer communication between scientists whose research interests are more or less related to aeroacoustic applications became the main focus of the Computational Experiment in Aeroacoustics conferences. This communication is the basis for solving specific problems of computational aeroacoustics, as well as for introducing computational experimentation in industrial development. Therefore, the conference subject is quite broad, covering not only computational aeroacoustics itself, but also the experimental and theoretical investigations and practical applications in aeroacoustics in general. Such a broad thematic scope is also reflected in the papers presented in this issue, which are devoted to the new numerical methods, including the technologies of supercomputer application in aeroacoustic calculations, as well as to fundamental and applied investigations in aeroacoustics and their practical application.