CHRONICLES

ALL-UNION CONFERENCE ON PROBLEMS OF TURBULENT LIQUID AND GAS FLOW

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During September 7-10, 1977, the Academy of Sciences of the USSR, the Academy of Sciences of the Ukrainian SSR, the Ministries for Higher and Middle Special Education of the USSR and Ukrainian SSR, and Donetsk State University sponsored, in the city of Donetsk, an All-Union conference on problems of turbulent liquid and gas flow in commemoration of the 60th anniversary of the Great October Revolution.

Approximately 200 representatives of scientific-research institutes and institutions of higher learning from 30 Soviet cities participated in the work of the conference. Participants presented 16 major reports and 70 papers containing new important results of both theoretical and experimental studies of turbulent flows, and also pertaining to modern methods of measuring turbulent flow characteristics. Problems of turbulent motion arising in technological processes within the chemical and power industries and other fields were considered.

Papers were presented to the conference by Academicians L. I. Sedov, V. V. Struminskii, and N. N. Yanenko, Corresponding Members of the Academy of Sciences of the USSR O. M. Belotserkovskii and N. A. Zheltukhin, and Corresponding Members of the Academy of Sciences of the Ukrainian SSR I. L. Povkh, G. N. Abramovich, A. S. Ginevskii, V. N. Zhigulev, E. A. Kapustin, L. G. Loitsyanskii, A. N. Patrashev, G. I. Taganov, A. M. Yaglom, and others.

Great interest was shown in the problem of reducing the hydrodynamic resistance of liquids by addition of polymers and surface-active substances. Major developments in the theoretical study of turbulent flow and new ideas and methods in the theory of perturbation development after loss of stability in laminar liquid flows were considered.

A large number of the papers were dedicated to turbulent jets. Results of studies of turbulent jets carrying solid and liquid droplet additives were presented, and experimental data on the effect of acoustic perturbations on jet dynamic characteristics were offered.

Great interest was shown in the problem of numerical simulation of turbulent flows.

Special subsections discussed questions of measuring turbulent characteristics and physicochemical properties of additives (polymers and surface-active agents) and their solutions.

The conference featured a display of measurement equipment, which included devices for measurement of turbulent characteristics designed and constructed at Donetsk State University, the Institute of High Temperatures of the Academy of Sciences of the USSR, M. I. Kalinin Leningrad Polytechnic Institute, S. M. Kirov Kazakh State University, and the Kishinev Scientific-Research Institute for Electrical Device Construction.

A resolution of the conference took note of the quite high overall level of turbulence studies in the USSR. It was decided to evaluate as rapidly as possible various approaches to the use of computer technology in turbulence studies. The necessity of further development of studies on reduction of hydrodynamic resistance by polymer and surface-active agent addition was recognized. President of the Central Committee Academician V. V. Struminskii was instructed to report to the Division of Mechanics and Control Processes of the Academy of Sciences of the USSR on the state of development of experimental research on turbulence, together with necessary requirements from production sources and in the field of measurement technology.

The desirability of annual All-Union conferences on problems of turbulent liquid and gas flow was recognized, together with the need for singling out the most pressing questions in the field for wide evaluation.

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