Editorial

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The biennial International Symposium on Shock Waves (ISSW) is the definitive international meeting on compressible fluid mechanics. This conference addresses all aspects of compressible flows, ranging from work on the fundamental physics of these flows, which to date still pose numerous challenges and unsolved problems to the scientific community, to various shock wave applications in industry, biology and medicine.

The latest installment of this series, ISSW 27, was held in St. Petersburg, Russia, from July 19 to July 24, 2009. A total of 261 papers were accepted for this meeting, and the diversity of the covered subjects was clearly demonstrated by the fact that these contributions could be classified into 15 main topics. Basic shock interaction phenomena—diffraction, reflection, focusing, interaction with boundary layers and vortices—were discussed alongside blast and detonation wave processes, super- and hyper-sonic flows, multiphase flows and plasmas. New facilities and methods, experimental and numerical, were presented together with results of applications of shock wave physics in industrial, biological and medical processes.

Participants of the ISSW27 meeting were encouraged to submit their results to the Shock Waves Journal, if they considered their material adequate for publication in an archival journal. All manuscripts received were subjected to the usual reviewing procedure for journal publications: they were reviewed by at least two independent referees, each of which an internationally recognized expert in the field, and were only accepted for publication if a corresponding consensus

was reached. It is a clear sign of the rigor and robustness of this review process that all manuscripts processed so far have gone through at least two revisions before being accepted.

The present issue contains nine of the contributions that have been submitted to the Shock Waves Journal. Seven full regular papers and two technical notes comprehensively illustrate the aforementioned diversity of subjects in shock wave/compressible fluid mechanics research, as each contribution represents a different basic topic. The contributions also clearly show the interdisciplinary and international character that shock wave research has attained over the last decades.

Ivanov et al. introduce an alternative numerical method to simulate shock interactions, Jourdan et al. describe how a shock wave is mitigated when passing through a cloud of water droplets, Gawehn et al. discuss the pseudo-shock systems obtained in nozzle flows, and Heufer and Olivier present a new high-pressure shock tube facility for measuring ignition delay times in hydrocarbons. Results on the efficiency of blast inhibitors are shown by Chernyshov et al., a new model for laser ablation of carbon is given by Shusser, and Belougaddia et al. summarize their comparisons of numerical and analytical predictions for the stand-off distance of shocks in hypersonic flows with experimental data. Two technical notes, one by Kim et al. on the interaction of a shock wave with a turbulent slit jet, and one by Shi et al. on underwater supersonic gas jets round off this first issue on selected topics from the ISSW 27 meeting.

The preparation of a second issue is now in progress.

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