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CRAWFORD PERKINS

Contact-surface Tailoring in Real Shock Tubes Springer Science & Business Media

This is the first volume of a two volume set which presents the results of the 31st International Symposium on Shock Waves (ISSW31), held in Nagoya, Japan in 2017. It was organized with support from the International Shock Wave Institute (ISWI), Shock Wave Research Society of Japan, School of Engineering of Nagoya University, and other societies, organizations, governments and industry. The ISSW31 focused on the following areas: Blast waves, chemical reacting flows, chemical kinetics, detonation and combustion, ignition, facilities, diagnostics, flow visualization, spectroscopy, numerical methods, shock waves in rarefied flows, shock waves in dense gases, shock waves in liquids, shock waves in solids, impact and compaction, supersonic jet, multiphase flow, plasmas, magnetohydrodynamics, propulsion, shock waves in internal flows, pseudo-shock wave and shock train, nozzle flow, re-entry gasdynamics, shock waves in space, Richtmyer-Meshkov instability, shock/boundary layer interaction, shock/vortex interaction, shock wave reflection/interaction, shock wave interaction with dusty media, shock wave interaction with granular media, shock wave interaction with porous media, shock wave interaction with obstacles, supersonic and hypersonic flows, sonic boom, shock wave focusing, safety against shock loading, shock waves for material processing, shock-like phenomena, and shock wave education. These proceedings contain the papers presented at the symposium and serve as a reference for the participants of the ISSW 31 and individuals interested in these fields.

29th International Symposium on Shock Waves 2 Springer

This proceedings present the results of the 29th International Symposium on Shock Waves (ISSW29) which was held in Madison, Wisconsin, U.S.A., from July 14 to July 19, 2013. It was organized by the Wisconsin Shock Tube Laboratory, which is part of the College of Engineering of the University of Wisconsin-Madison.

The ISSW29 focused on the following areas: Blast Waves, Chemically Reactive Flows, Detonation and Combustion, Facilities, Flow Visualization, Hypersonic Flow, Ignition, Impact and Compaction, Industrial Applications, Magnetohydrodynamics, Medical and Biological Applications, Nozzle Flow, Numerical Methods, Plasmas, Propulsion, Richtmyer-Meshkov Instability, Shock-Boundary Layer Interaction, Shock Propagation and Reflection, Shock Vortex Interaction, Shock Waves in Condensed Matter, Shock Waves in Multiphase Flow, as well as Shock Waves in Rarefield Flow. The two Volumes contain the papers presented at the symposium and serve as a reference for the participants of the ISSW 29 and individuals interested in these fields.

Test Time in Low Pressure Shock Tubes Springer

This volume deals with the propagation of three-dimensional shock waves and their reflection from curved walls. It is divided into two parts. The first part presents a ray method. This is based on the expansion of fluid properties in power series at an arbitrary point on the shock front. Continuous fractions are used. Results for shock propagation in non-uniform fluids are given. The second part discusses the shock reflection from a concave body. The important shock-focusing problem is included. The work is supported by both numerical and experimental results. Many interesting features, such as formation of a jet, vortices and the appearance of disturbances on the shock front, are discussed. Besides shock waves in gases, the distinctive features of shock propagation through a weakly ionized plasma are considered.

Shock Waves Elsevier

Recently, there have been significant advances in the fields of high-enthalpy hypersonic flows, high-temperature gas physics, and chemistry shock propagation in various media, industrial and medical applications of shock waves, and shock-tube technology. This series contains all the papers and lectures of the 19th International Symposium on Shock Waves held in Marseille in 1993. They are published in four topical volumes, each containing papers on related topics, and preceded by an overview written by a leading international expert. The volumes may be purchased independently.

Shock Waves @ Marseille IV SUNY Press

Proceedings from a symposium on shock tubes and waves held July 6-9, 1981.

Shock Wave-induced Mixing in Parallel Flow Springer Nature

The symposia take place every two years. They are the forum at which scientists concerned with shock waves present their research. They USE shock waves for chemical kinetics studies, for materials studies, and smashing kidney stones; they STUDY the phenomena associated with flows involving shock waves, such as supersonic flow, explosions, detonations, volcanic eruptions, and, in this symposium, even such with-it topics as impact of Shoemaker-Levy on Jupiter and blast waves in the World Trade Center. They also discover new, bigger and better ways of generating flows at hypervelocity speeds and develop their technological tools further. The international exchange of information is documented in the proceedings volumes, which have become a storehouse of information on the subject, documenting the history of this peculiar branch of science that involves chemists, physicists, engineers, geophysicists, material scientists and biologists.

Shock Waves - Proceedings Of The 20th International Symposium (In 2 Volumes) Springer Science & Business Media

The first comprehensive reference guide to turbulent mixing driven by Rayleigh-Taylor, Richtmyer-Meshkov and Kelvin-Helmholtz instabilities.

30th International Symposium on Shock Waves 1 Cambridge University Press

This proceedings present the results of the 29th International Symposium on Shock Waves (ISSW29) which was held in Madison, Wisconsin, U.S.A., from July 14 to July 19, 2013. It was organized by the Wisconsin Shock Tube Laboratory, which is part of the College of Engineering of the University of Wisconsin-Madison. The ISSW29 focused on the following areas: Blast Waves, Chemically Reactive Flows, Detonation and Combustion, Facilities, Flow Visualization, Hypersonic Flow, Ignition, Impact and Compaction, Industrial Applications, Magnetohydrodynamics, Medical and Biological Applications, Nozzle Flow, Numerical Methods, Plasmas, Propulsion, Richtmyer-Meshkov Instability,

Shock-Boundary Layer Interaction, Shock Propagation and Reflection, Shock Vortex Interaction, Shock Waves in Condensed Matter, Shock Waves in Multiphase Flow, as well as Shock Waves in Rarefield Flow. The two Volumes contain the papers presented at the symposium and serve as a reference for the participants of the ISSW 29 and individuals interested in these fields.

31st International Symposium on Shock Waves Springer Science & Business Media

This book illustrates the latest progress on the hydrodynamic instabilities induced by a shock wave, particularly RM (Richtmyer-Meshkov) instability. The hydrodynamic instabilities play crucial roles in various industrial and scientific fields, such as inertial confinement fusion, supersonic combustion, supernova explosion, etc. This book experimentally and theoretically explores the shock-driven instabilities of complex gas-gas and gas-liquid interfaces. The main difficulty in performing an experimental study on RM instability, especially in a shock-tube circumstance, lies in creating an idealized initial interface because the RM instability is extremely sensitive to the initial condition. This book introduces new experimental methods to generate shape-controllable two-dimensional gaseous interfaces, thickness-controllable gas layers, and water droplets embedded with a vapour bubble in the shock-tube experiments. It covers the latest experiments and theories on the shock-driven hydrodynamic instabilities of multi-mode, multi-layer, and multi-phase interfaces. It explores the effects of the mode-competition, interface-coupling, and phase-transition on interface evolution, respectively. This book establishes a universal nonlinear theory to predict the RM instability of a shocked multi-mode interface based on spectrum analysis. This book quantifies the effects of interface-coupling and reverberating waves on the hydrodynamic instabilities of a shocked multi-layer interface. This book provides the experimental studies of the interaction of a shock wave and a multi-phase droplet and proposes a modified Rayleigh-Plesset equation to predict the vapour bubble collapse inside a droplet.

Shock-tube Flow Analysis with a Dimensionless Velocity Number Springer

The 26th International Symposium on Shock Waves in Göttingen, Germany was jointly organised by the German Aerospace Centre DLR and the French-German Research Institute of Saint Louis ISL. The year 2007 marked the 50th anniversary of the Symposium,

which first took place in 1957 in Boston and has since become an internationally acclaimed series of meetings for the wider Shock Wave Community. The ISSW26 focused on the following areas: Shock Propagation and Reflection, Detonation and Combustion, Hypersonic Flow, Shock Boundary Layer Interaction, Numerical Methods, Medical, Biological and Industrial Applications, Richtmyer Meshkov Instability, Blast Waves, Chemically Reacting Flows, Diagnostics, Facilities, Flow Visualisation, Ignition, Impact and Compaction, Multiphase Flow, Nozzles Flows, Plasmas and Propulsion. The two Volumes contain the papers presented at the symposium and serve as a reference for the participants of the ISSW 26 and individuals interested in these fields.

29th International Symposium on Shock Waves 2 World Scientific

These proceedings collect the papers presented at the 30th International Symposium on Shock Waves (ISSW30), which was held in Tel-Aviv Israel from July 19 to July 24, 2015. The Symposium was organized by Ortra Ltd. The ISSW30 focused on the state of knowledge of the following areas: Nozzle Flow, Supersonic and Hypersonic Flows with Shocks, Supersonic Jets, Chemical Kinetics, Chemical Reacting Flows, Detonation, Combustion, Ignition, Shock Wave Reflection and Interaction, Shock Wave Interaction with Obstacles, Shock Wave Interaction with Porous Media, Shock Wave Interaction with Granular Media, Shock Wave Interaction with Dusty Media, Plasma, Magnetohydrodynamics, Re-entry to Earth Atmosphere, Shock Waves in Rarefied Gases, Shock Waves in Condensed Matter (Solids and Liquids), Shock Waves in Dense Gases, Shock Wave Focusing, Richtmyer-Meshkov Instability, Shock Boundary Layer Interaction, Multiphase Flow, Blast Waves, Facilities, Flow Visualization, and Numerical Methods. The two volumes serve as a reference for the participants of the ISSW30 and anyone interested in these fields.

A Nonlinear Theory for Predicting the Effects of Unsteady Laminar, Turbulent, Or Transitional Boundary Layers on the Attenuation of Shock Waves in a Shock Tube with Experimental Comparison Elsevier

The University of Manchester hosted the 28th International Symposium on Shock Waves between 17 and 22 July 2011. The International Symposium on Shock Waves first took place in 1957 in Boston and has since become an internationally acclaimed

series of meetings for the wider Shock Wave Community. The ISSW28 focused on the following areas: Blast Waves, Chemically Reacting Flows, Dense Gases and Rarefied Flows, Detonation and Combustion, Diagnostics, Facilities, Flow Visualisation, Hypersonic Flow, Ignition, Impact and Compaction, Multiphase Flow, Nozzle Flow, Numerical Methods, Propulsion, Richtmyer-Meshkov, Shockwave Boundary Layer Interaction, Shock Propagation and Reflection, Shock Vortex Interaction, Shockwave Phenomena and Applications, as well as Medical and Biological Applications. The two Volumes contain the papers presented at the symposium and serve as a reference for the participants of the ISSW 28 and individuals interested in these fields.

Statistical Hydrodynamic Models for Developed Mixing Instability Flows Springer Science & Business Media

Shock wave-boundary-layer interaction (SBLI) is a fundamental phenomenon in gas dynamics that is observed in many practical situations, ranging from transonic aircraft wings to hypersonic vehicles and engines. SBLIs have the potential to pose serious problems in a flowfield; hence they often prove to be a critical - or even design limiting - issue for many aerospace applications. This is the first book devoted solely to a comprehensive, state-of-the-art explanation of this phenomenon. It includes a description of the basic fluid mechanics of SBLIs plus contributions from leading international experts who share their insight into their physics and the impact they have in practical flow situations. This book is for practitioners and graduate students in aerodynamics who wish to familiarize themselves with all aspects of SBLI flows. It is a valuable resource for specialists because it compiles experimental, computational and theoretical knowledge in one place.

Issues in Mechanical Engineering: 2013 Edition Cambridge University Press

This is the first volume of a two volume set which presents the results of the 31st International Symposium on Shock Waves (ISSW31), held in Nagoya, Japan in 2017. It was organized with support from the International Shock Wave Institute (ISWI), Shock Wave Research Society of Japan, School of Engineering of Nagoya University, and other societies, organizations, governments and industry. The ISSW31 focused on the following areas: Blast waves, chemical reacting flows, chemical kinetics, detonation and combustion, ignition, facilities, diagnostics, flow visualization,

spectroscopy, numerical methods, shock waves in rarefied flows, shock waves in dense gases, shock waves in liquids, shock waves in solids, impact and compaction, supersonic jet, multiphase flow, plasmas, magnetohydrodynamics, propulsion, shock waves in internal flows, pseudo-shock wave and shock train, nozzle flow, re-entry gasdynamics, shock waves in space, Richtmyer-Meshkov instability, shock/boundary layer interaction, shock/vortex interaction, shock wave reflection/interaction, shock wave interaction with dusty media, shock wave interaction with granular media, shock wave interaction with porous media, shock wave interaction with obstacles, supersonic and hypersonic flows, sonic boom, shock wave focusing, safety against shock loading, shock waves for material processing, shock-like phenomena, and shock wave education. These proceedings contain the papers presented at the symposium and serve as a reference for the participants of the ISSW 31 and individuals interested in these fields.

30th International Symposium on Shock Waves 2 Springer Science & Business Media

Shock wave research covers important interdisciplinary areas which range from basic topics on gasdynamics, combustion and detonation, physico-chemistry of high temperature gases, plasma physics, astro and geophysics, materials science, astronautics and space technology to medical and industrial applications. This book includes 202 papers presented at the 18th the International Symposium on Shock Waves which describe the research frontier of shock wave phenomena and 14 plenary lectures which show the state of the art of various fields of shock wave research. This proceedings is a unique collection of most important and updated shock wave research.

Shock Waves Springer Science & Business Media

Progress in High Temperature Physics and Chemistry

28th International Symposium on Shock Waves Springer

The 26th International Symposium on Shock Waves in Göttingen, Germany was jointly organised by the German Aerospace Centre DLR and the French-German Research Institute of Saint Louis ISL. The year 2007 marked the 50th anniversary of the Symposium, which first took place in 1957 in Boston and has since become an internationally acclaimed series of meetings for the wider Shock Wave Community. The ISSW26 focused on the following areas: Shock Propagation and Reflection, Detonation and Combustion, Hypersonic Flow, Shock Boundary Layer Interaction, Numerical Methods, Medical, Biological and Industrial Applications, Richtmyer Meshkov Instability, Blast Waves, Chemically Reacting Flows, Diagnostics, Facilities, Flow Visualisation, Ignition, Impact and Compaction, Multiphase Flow, Nozzles Flows, Plasmas and Propulsion. The two Volumes contain the papers presented at the symposium and serve as a reference for the participants of the ISSW 26 and individuals interested in these fields.

Propagation And Reflection Of Shock Waves ScholarlyEditions

The 26th International Symposium on Shock Waves in Göttingen, Germany was jointly organised by the German Aerospace Centre DLR and the French-German Research Institute of Saint Louis ISL. The year 2007 marked the 50th anniversary of the Symposium, which first took place in 1957 in Boston and has since become an internationally acclaimed series of meetings for the wider Shock Wave Community. The ISSW26 focused on the following areas: Shock Propagation and Reflection, Detonation and Combustion, Hypersonic Flow, Shock Boundary Layer Interaction, Numerical Methods, Medical, Biological and Industrial Applications, Richtmyer Meshkov Instability, Blast Waves, Chemically Reacting

Flows, Diagnostics, Facilities, Flow Visualisation, Ignition, Impact and Compaction, Multiphase Flow, Nozzles Flows, Plasmas and Propulsion. The two Volumes contain the papers presented at the symposium and serve as a reference for the participants of the ISSW 26 and individuals interested in these fields.

29th International Symposium on Shock Waves 1 Springer

A theory is presented for the attenuation due to viscous boundary layer of shock waves traveling in closed passages. Because of the similar nature of the problem, the theory is also developed for the attenuation of a hydraulic jump moving in a channel. The results of experiments that bear out the theory are presented for both a shock tube and a hydraulic channel.

29th International Symposium on Shock Waves 1 Springer

This proceedings present the results of the 29th International Symposium on Shock Waves (ISSW29) which was held in Madison, Wisconsin, U.S.A., from July 14 to July 19, 2013. It was organized by the Wisconsin Shock Tube Laboratory, which is part of the College of Engineering of the University of Wisconsin-Madison. The ISSW29 focused on the following areas: Blast Waves, Chemically Reactive Flows, Detonation and Combustion, Facilities, Flow Visualization, Hypersonic Flow, Ignition, Impact and Compaction, Industrial Applications, Magnetohydrodynamics, Medical and Biological Applications, Nozzle Flow, Numerical Methods, Plasmas, Propulsion, Richtmyer-Meshkov Instability, Shock-Boundary Layer Interaction, Shock Propagation and Reflection, Shock Vortex Interaction, Shock Waves in Condensed Matter, Shock Waves in Multiphase Flow, as well as Shock Waves in Rarefield Flow. The two Volumes contain the papers presented at the symposium and serve as a reference for the participants of the ISSW 29 and individuals interested in these fields.