

Preface

This volume contains the papers presented at the 18th DGLR/STAB-Symposium held in Stuttgart, Germany, in November, 6–7, 2012 and organized by the Institute of Aerodynamics and Gas Dynamics of Stuttgart University. STAB is the German Aerospace Aerodynamics Association, founded toward the end of the 1970s, whereas DGLR is the German Society for Aeronautics and Astronautics (Deutsche Gesellschaft für Luft- und Raumfahrt—Lilienthal Oberth e.V.).

The mission of STAB is to foster development and acceptance of the discipline “Aerodynamics” in Germany. One of its general guidelines is to concentrate resources and know-how in the involved institutions and to avoid duplication in research work as much as possible. Nowadays, this is more necessary than ever. The experience made in the past makes it easier now, to obtain new knowledge for solving today’s and tomorrow’s problems. STAB unites German scientists and engineers from universities, research-establishments, and industry doing research and project work in numerical and experimental fluid mechanics and aerodynamics for aerospace and other applications. This has always been the basis of numerous common research activities sponsored by different funding agencies.

Since 1986 the symposium has taken place at different locations in Germany every 2 years. In between STAB workshops regularly take place at the DLR in Göttingen. The changing meeting places were established as focal points in Germany’s Aerospace Fluid Mechanics Community for a continuous exchange of scientific results and their discussion. Moreover, they are a forum where new research activities can be presented, often resulting in new commonly organized research and technology projects.

It is the ninth time now that the contributions to the Symposium are published after being subjected to a peer review. The material highlights the key items of integrated research and development based on fruitful collaboration of industry, research establishments, and universities. The research areas include air-plane aerodynamics, multidisciplinary optimization and new configurations, turbulence research and modeling, laminar flow control and transition, rotorcraft

aerodynamics, aeroelasticity and structural dynamics, numerical simulation, experimental simulation and test techniques, aeroacoustics as well as the rather new fields of biomedical flows, convective flows as well as aerodynamics and acoustics of ground vehicles.

From some 90 lectures presented at the Symposium 68 are included in this book.

The Review Board, partly identical with the Program Committee, consisted of J. Arnold (Göttingen), K. Becker (Bremen), S. Becker (Erlangen), M. Behr (Aachen), H. Bieler (Bremen), P. Birken (Kassel), J. Bosbach (Göttingen), C. Breitsamter (Garching), G. Brenner (Clausthal), M. Buschmann (Dresden), C. Cierpka (Neubiberg), K. Ehrenfried (Göttingen), J. Fassbender (Bremen), D. Fiala (Stuttgart), H. Foysi (Siegen), A. Friedl (Neubiberg), J. Fröhlich (Dresden), A. Gardner (Göttingen), N. Gauger (Aachen), K. Geurts (Aachen), C. Gmelin (Berlin), P. Gnemmi (St. Louis), C. Grabe (Göttingen), S. Grundmann (Darmstadt), S. Guerin (Berlin), H. Hansen (Bremen), R. Hartmann (Braunschweig), A. Hartmann (Aachen), M. Haupt (Braunschweig), S. Hein (Göttingen), R. Heinrich (Braunschweig), M. Hepperle (Braunschweig), H. Herwig (Hamburg), S. Hickel (Garching), R. Höld (Unterschleißheim), R. Hörschemeyer (Aachen), S. Illi (Stuttgart), T. Indinger (Garching), S. Jakirlic (Darmstadt), L. Jehring (Cottbus), J. Jovanovic (Erlangen), C. Kandzia (Aachen), M. Keßler (Stuttgart), T. Kier (Oberpfaffenhofen), M. Klaas (Aachen), A. Klein (München), I. Klioutchnikov (Aachen), M. Kloker (Stuttgart), J. Kokavec (Göttingen), M. Konstantinov (Göttingen), E. Krämer (Stuttgart), H.-P. Kreplin (Göttingen), M. Kriegel (Berlin), A. Krumbein (Göttingen), M. Kruse (Braunschweig), F.-O. Lehmann (Rostock), T. Lerche (Hamburg), T. Lutz (Stuttgart), H. Mai (Göttingen), M. Meinke (Aachen), F. Menter (Otterfing), R. Meyer (Berlin), C. Mockett (Berlin), T. Möller (Braunschweig), D. Müller (Aachen), B. Müller (Berlin), C.-D. Munz (Stuttgart), A. Nemili (Aachen), W. Nitsche (Berlin), F. Obermeier (Freiberg), H. Olivier (Aachen), C. Othmer (Wolfsburg), I. Peltzer (Berlin), J. Raddatz (Braunschweig), R. Radespiel (Braunschweig), L. Reimer (Braunschweig), M. Rein (Göttingen), B. Reinartz (Aachen), C. Resagk (Ilmenau), S. Reuss (Göttingen), K. Richter (Göttingen), U. Rist (Stuttgart), M. Ritter (Göttingen), H. Rosemann (Göttingen), T. Rösgen (Zürich), C.-C. Rossow (Braunschweig), F. Rüdiger (Dresden), M. Rütten (Göttingen), E. Sarraji (Cottbus), M. Schmidt (Aachen), G. Schmitz (Hamburg), P. Scholz (Braunschweig), N. Schönwald (Berlin), W. Schröder (Aachen), E. Schüle (Göttingen), V. Schulz (Trier), J. Schumacher (Ilmenau), D. Schwamborn (Göttingen), T. Schwarz (Braunschweig), A. Seitz (Braunschweig), W. Send (Göttingen), M. Siebenborn (Trier), C. Stemmer (Garching), A. Stück (Braunschweig), A. Stuermer (Braunschweig), E. Stumpf (Aachen), F. Thiele (Berlin), C. Tropea (Darmstadt), C. Weckmüller (Berlin), W. Wegner (Göttingen), K. Weinman (Göttingen), M. Widhalm (Braunschweig), J. Wild (Braunschweig), C. Willert (Köln), and W. Würz (Stuttgart).

Nevertheless, the authors sign responsible for the contents of their contributions.

The editors are grateful to Prof. Dr. W. Schröder as the General Editor of the “Notes on Numerical Fluid Mechanics and Multidisciplinary Design” and to the Springer-Verlag for the opportunity to publish the results of the Symposium.

June 2013

A. Dillmann
G. Heller
E. Krämer
H.-P. Kreplin
U. Rist

New Results in Numerical and Experimental Fluid
Mechanics IX

Contributions to the 18th STAB/DGLR Symposium,
Stuttgart, Germany, 2012

Dillmann, A.; Heller, G.; Krämer, E.; Kreplin, H.-P.;
Nitsche, W.; Rist, U. (Eds.)

2014, XVI, 683 p. 427 illus., 105 illus. in color.,
Hardcover

ISBN: 978-3-319-03157-6