

# Preface

The 26th International Symposium on Shock Waves was held from July 15 to July 20, 2007 in the “Deutsches Theater in Göttingen”, Germany. It was jointly organised by the German Aerospace Center DLR and the French-German Research Institute of Saint Louis ISL. The year 2007 marks the 50th anniversary of this symposium which was held for the first time in 1957 in Boston - at that time named “Shock Tube Symposium”. After 1967 in Freiburg, being the first symposium which was held outside the United States of America, and 1987 in Aachen, it was an honour for us to host the symposium again in Germany and to celebrate this memorable anniversary. Moreover, we were pleased to organise ISSW26 in the same year in which 100 years of institutionalised German aerospace research is commemorated. This event refers back to the long history of basic and applied contributions to applied mechanics, hydro-, aero-, and gas dynamics which was started in Göttingen by Ludwig Prandtl at the beginning of the last century. In 1907, Ludwig Prandtl founded the “Modellversuchsanstalt für Aerodynamik der Motorluftschiff-Studiengesellschaft” (Institute for Testing of Aerodynamic Models of the Powered Airship Society) in Göttingen and he is therefore considered one of the key founding fathers of institutionalised aerospace research. Later the “Modellversuchsanstalt Göttingen” became the “Aerodynamische Versuchsanstalt AVA” (Institute for Aerodynamic Testing), a precursor of the modern day German Aerospace Center DLR.

After the first and second announcement of the symposium was distributed in summer 2006, 464 expressions of interest from 29 countries were received. The call for abstract submission resulted in a total number of 336 abstracts. Each abstract was reviewed by two members of the ISSW26 Scientific Review Committee which consisted of 49 renowned experts in the field of shock wave research. The final program of the symposium contained nine plenary lectures, 161 oral and 87 poster contributions presented in 47 sessions. The posters were presented in two dedicated sessions without overlapping oral presentations.

Two hundred and eighty two participants, of which 71 were students, from 23 countries registered. The nations from which the participants originated were: Germany (66), Japan (48), Russia (26), USA (25), Australia (16), France (14), Canada (11), India (10), Israel (10), Republic of Korea (10), China (9), United Kingdom (9), Netherlands (5), South Africa (5), Belarus (3), Switzerland (3), Taiwan (3), Brasil (2), Norway (2), Singapore (2), Italy (1), Poland (1) and Ukraine (1). In addition, 50 partners enrolled for the companions program of ISSW26.

Following the opening ceremony, the symposium was started with the Paul Vieille Lecture, given by Prof. Hans Hornung, California Institute of Technology, providing an exciting presentation on: “Relaxation Effects in Hypervelocity Flow: Selected Contributions from the T5 Lab”.

A new facet for ISSW was the initiation of the Student Award of the International Shock Wave Institute ISWI. The mission of ISWI, which was founded two years ago, is

to promote international and interdisciplinary collaboration in all areas of shock wave research through the organisation of conferences, awards and honours and to facilitate liaison with other organisations with similar interests and activities. We hope that with the ISWI Student Award we start a tradition for all the following ISSWs which will further strengthen the links between the ISWI and the shock wave symposia. The award was given to the best two student presentations at ISSW26 in Göttingen. Oral- and poster presentations given by the student participants were considered for the prize and the jury consisted of members of the International Advisory Committee and Session Chairpersons of ISSW26. The ISWI Student Award, which was endowed with \$1000 US each, was presented during the opening ceremony of the ISSW26 Dinner Banquet by Prof. Kazuyoshi Takayama, President of the International Shock Wave Institute. The winners are:

- Khadijeh Mohri, Imperial College, London, for her presentation on: “Supersonic Flow Over Axisymmetric Cavities” (together with R. Hillier) and
- Roger Aure, University of Arizona, for his presentation on: “Particle Image Velocimetry Study of Shock induced Single Mode Richtmyer-Meshkov Instability” (together with J.W. Jacobs).

Something unique was the venue of ISSW26. The international shock wave community met in the “Deutsches Theater in Göttingen” (German Theatre) where, during the season, works of classical and modern theatre are performed. Based on the comments we received from many participants we can conclude that our hope that the combination of artistic atmosphere and science will result in an inspiring symposium was fulfilled. The theatre, which was opened in 1890 with the performance of Friedrich Schiller’s “Wilhelm Tell”, is located right next to the remains of the mediaeval town wall which surrounds the historic city centre of Göttingen. Much of the urban life takes place within the old town walls and all places of interest including hotels and restaurants could be reached by a leisurely ten to fifteen minute walk.

The scientific program was complemented by a number of social events. The lunches were provided in the Old Mensa (refectory) of the University of Göttingen located in the city centre. On Monday evening Göttingen was introduced to the ISSW26 participants during a city tour which finished with a reception of the mayor of Göttingen in the Old Town Hall. The over 1050 years old town of Göttingen is set amid the rolling mountain landscape of southern Lower Saxony in the central part of Germany. The landmark of Göttingen is the Gänselesel figure on the fountain at the market square in front of the Old Town Hall. This art nouveau statue shows a girl herding geese. It is a tradition that all PhD graduates from the University kiss the statue after passing their examination. This makes her “the most kissed girl in the world”. In addition to the charm of the city centre with its evocative relics of past centuries, Göttingen is well known in the scientific community for its large university, numerous research institutes and 44 Nobel Prize winners who lived or worked in Göttingen. On Wednesday, the symposium excursion led the ISSW26 participants to the city of Wernigerode located at the northern border of the Harz mountains. Wernigerode is a town with gorgeous half-timbered houses - the oldest of which can be traced back to the year 1400. The Town Hall is a highlight of medieval architecture and high above the city the Castle of Wernigerode is located, an originally romanesque castle dating from the 12th century which was extensively altered over the centuries. The symposium excursion ended with a barbecue at the Göttingen site of DLR. On Thursday night, the traditional symposium dinner banquet took place in the main foyer, the glass foyer and the “Keller” (cellar) of the Deutsches Theater. The ceremonial

opening of the banquet in the Große Haus of the Deutsches Theater included addresses, the presentation of the ISWI student award, the announcement of the ISSW27 venue and musical entertainment by the “Trio con Brio” of the Göttingen Symphonic Orchestra. On Friday afternoon the ISSW26 was concluded by a facility tour of the Göttingen DLR site.

A companions program was organised during ISSW26, which led the partners and family members of the participants to various locations in the southern Lower Saxony and Göttingen area including the “Sleeping Beauty Castle” Sababurg, the Weser river, Marienburg Castle near Hildesheim, the City of Einbeck, the Plesse Fort, Herzberg Castle, the former German - German border, the Harz mountains and the city of Goslar.

During the meeting of the International Advisory Committee of ISSW26, the venue for ISSW27 which will be held in 2009, was selected. Three excellent proposals were presented to the IAC which shows that there is a continuing interest in ISSW. The 27th International Symposium on Shock Waves will be held in St. Petersburg, Russia and will be chaired by Dr. Irina Krassovskaya of Ioffe Institute, Russian Academy of Sciences. On behalf of the Organising Committee of ISSW26, we congratulate Irina Krassovskaya and wish ISSW27 great success.

ISSW26 could not have been realised without the support of the host institutions, the German Aerospace Center DLR and the French-German Research Institute of Saint Louis ISL, and this is gratefully acknowledged. Further, ISSW26 was generously sponsored by the German Research Foundation DFG and the state of Lower Saxony. The companies LaVision, MF Instruments, Palas, Shimadzu, Springer and VKT could be acquired who supported ISSW26 with a stand at the conference venue.

On behalf of the Organising Committee of ISSW26, we would very much like to thank all participants who came to Göttingen to support the symposium with their attendance and the presentation of a poster or a talk. We would also like to express our gratitude to the members of the International Advisory Committee and the Scientific Review Committee for their continuous support during the preparation and running of the conference. Further, we would like to thank those colleagues who served as session chairperson and who guaranteed an accurate performance of the parallel sessions.

Finally, the support and enthusiasm of all the people who supported the organisation of ISSW26 including the project management of DLR, the logistics section and the secretaries of the DLR Institute of Aerodynamics and Flow Technology, the DLR canteen staff, the ISL team, the students, the team of the Deutsches Theater, the catering team of the Bistro DT Keller and the members of the Spacecraft Section and their families is highly acknowledged. The team spirit of these people was the basis of the realisation of ISSW26 and their friendly appearance was greatly appreciated by the symposium participants.

Göttingen, July 2007

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