

Preface

The second biannual Summer Program of the TRR 40 Collaborative Research Center “Fundamental Technologies for the Development of Future Space-Transport-System Components under High Thermal and Mechanical Loads” was held during the months of July and August 2013 at Technische Universität München under the auspices of the German Research Foundation (DFG). 16 research groups have been created by researchers of TRR 40 and visiting researchers, based on proposals received from China, France, India, Italy, Japan, Russia, Switzerland, Turkey, and the USA. In an intense four-week activity these groups have driven forward their projects and rigorously scrutinized their process with intermediate and final project reviews.

Project work has been accompanied by lectures on special subjects of interest to the research delivered by distinguished lecturers:

- Dr. P. Birken, Lund University, Sweden
- Dr. J. H. Chen, Sandia National Laboratories, Livermore, CA, USA
- Prof. Dr. J. A. Domaradzki, University of Southern California
- Dr. I. A. Leyva, Combustion Devices Group Edwards Airforce Base, CA, USA
- Prof. S. Menon, GeorgiaTech, Atlanta, GA, USA
- Prof. Dr. C. D. Pruett, James Madison University, Harrisonburg, VA, USA

Subjects of the research projects were focused on the numerical prediction and experimental characterization of physically complex flows, reacting flows, combustion instabilities and flow control. Synergies have been created by exchanging simulation models and experimental techniques, making sophisticated computer codes and experimental facilities available and by intense exchange of scientific experience and knowledge.

All participants are grateful to Dr. C. Stemmer for the scientific organization and to Ms. S. Greil for the administrative organization of the Summer Program, which was funded by the German Research Foundation (DFG) within the TRR 40 framework. Computing Resources have been provided by the Leibniz Supercomputing Center (LRZ), one of the three national high-performance computing centers in Germany.

On behalf of the executive board
Nikolaus A. Adams, Speaker
Garching, March 2014