

DAAD

Deutscher Akademischer Austausch Dienst
German Academic Exchange Service



RUSSIAN UNION OF
YOUNG SCIENTISTS

DFG

Deutsche
Forschungsgemeinschaft



The Third German-Russian Week of the Young Researcher

“Aviation and Space”

**Novosibirsk
September 23-27, 2013**

***Draft of programme
All speakers to be confirmed***

Deutsches Wissenschafts- und
Innovationshaus – Moskau



Deutschland
Land der Ideen

Conference Hotel

The Congress Hotel "Novosibirsk"

Vokzalnaya magistral, 1
630004, Novosibirsk, Russia

Tel: +7 (383) 364 01 01, +7 (383) 364 02 13

Conference Location

Novosibirsk State Technical University

Prospekt K. Marksa, 20,
630073, Novosibirsk, Russia

Institute of Theoretical and Applied Mechanics

Institutskaya str., 4/1
630090, Novosibirsk, Russia

September 22, Sunday

13:00	Light Lunch	<i>Hotel Novosibirsk,</i>
14:00- 18:00	Sightseeing Tour	
19:00	Words of Welcome to the participants of the week by <ul style="list-style-type: none"> • Dr. Gregor BERGHORN, DAAD Moscow • Dr. Jörn ACHTERBERG, DFG Moscow • Dr. Aleksandr SHCHEGLOV, Chairman of the Council of the Russian Union of Young Scientists (ROSMU), Moscow 	<i>Welcome Party at Hotel Novosibirsk</i>

September 23, Monday

09:30	Transfer to Novosibirsk State Technical University	<i>from Hotel Novosibirsk</i>
10:00	Registration of Participants	<i>Novosibirsk State Technical University</i>
11:00	Official Opening of the Week with welcome addresses by <ul style="list-style-type: none"> • Prof. Dr. Nikolai PUSTOVOI, Rector of Novosibirsk State Technical University • Academician Prof. Aleksandr ASEEV, Chairman of Siberian Branch of Russian Academy of Sciences (SB RAS) • Prof. Dr. Mikhail FEDORUK, Rector of Novosibirsk State University • Neithart HÖFER-WISSING, Consul General of the Federal Republic of Germany in Novosibirsk • Prof. Dr. Peter FUNKE, Vice-President of the DFG • N.N., DAAD • Dr. Aleksandr SHCHEGLOV, Chairman of the Council of the Russian Union of Young Scientists (ROSMU) 	<i>Aktovy Zal</i>

12:00	Simulation of Cooled Scramjet Flows Prof. Dr.-Ing. Wolfgang SCHRÖDER, Institute of Aerodynamics (AIA) RWTH Aachen University - <i>Discussion</i> –	
13:00	Lunch	<i>Dining Hall</i>
14:00	Introductory remarks to The Third German-Russian “Week of the Young Researcher” <ul style="list-style-type: none"> • Prof. Dr. Peter FUNKE, Vice-President of the DFG • N.N., DAAD 	<i>Conference Hall</i>
14:30	Presentation of Novosibirsk State Technical University (NSTU) Prof. Dr. Evgeniy TSOL, Vice-Rector for International Affairs, NSTU	
15:00	Model-Based Systems Design For Safety Critical Systems Prof. Dr. techn. Klaus JANSCHKE, Chair of Automation Engineering, Dresden University of Technology - <i>Discussion</i> -	
16:00	Coffee Break	
16:30	Short Lectures of Young Researchers Chair: <ul style="list-style-type: none"> • Prof. Dr.-Ing. Wolfgang SCHRÖDER, RWTH Aachen University • Prof. Dr. techn. Klaus JANSCHKE, Dresden University of Technology Mr. MAKAROV, Valeriy: “The Concept of the Automated System of Forecasting and Preventing Flight Accidents” Mr. SONNENBURG, Arne: “Vision Based Estimation And 3D Reconstruction For Rendezvous Navigation Relative To An Unknown And Uncooperative Target Spacecraft”	

Mr. KLIX, Michael, Mr. PFANNE, Martin: "Adaptive Federative 3d Exploration with Multi Robot Systems"

Mr. AZIN, Anton: "Universal Miniaturization of Electronic Components and the Transition to a Modern Layout of Circuits of Electronic Modules"

Mr. KONDAKOV, Ivan: "Development of Pro-Composite Fuselage Structures for Perspective Airlines"

Mr. IGNATEV, Dmitry: "Modeling of Nonlinear Unsteady Aerodynamics of Aircraft at High Angles of Attack Using Recurrent Neural Networks"

Mr. RASHIDOV, Arseniy: "Software Tool for Error Propagation Analysis"

18:00 Transfer to the Hotel

19:30 **Evening Reception by DWIH and the German Consul General in Novosibirsk** *Hotel Novosibirsk, Banquet Hall*

September 24, Tuesday

09:00 Transfer to Akademgorodok

10:00 **Presentation of Akademgorodok** *Akademgorodok*
Academician Prof. Aleksandr ASEEV *Dom Uchenych*
Chairman of Siberian Branch of Russian Academy of *Malyj Zal*
Sciences (SB RAS)

10:30 **Presentation of Novosibirsk State University**
Prof. Dr. Sergey NETESOV
Vice-Rector for International Affairs, NSU

11:00 **Presentation of the Institute of Theoretical and Applied Mechanics (ITAM)**
Prof. Vasiliy FOMIN
Director of ITAM

11:30 Coffee Break

11:45 **Aero-thermodynamic Design Of A Scramjet Propulsion System – Research Training Group GRK 1095**

Dr.-Ing. Uwe GAISBAUER
Institute of Aerodynamics and Gas Dynamics (IAG),
University of Stuttgart

12:30	Short Lectures of Young Researchers from Research Training Group GRK 1095 “Supersonic Combustion in a Scramjet Engine” Mr. SCHEUERMANN, Tobias Mr. DRÖSKE, Nils Mr. VELLARAMKALAYIL, Jiby	
13:00	Dr. Aleksander SCHIPLYUK Institute of Theoretical and Applied Mechanics (ITAM)	
13:30	Prof. Aleksander KOSINOV Institute of Theoretical and Applied Mechanics (ITAM)	
14:00	Lunch	
15:00	Poster Session of Young Researchers Chair: <ul style="list-style-type: none"> • Dr.-Ing. Uwe GAISBAUER University of Stuttgart • Dr. Aleksander SCHIPLYUK Institute of Theoretical and Applied Mechanics Mr. SHOEV, Georgy: “Numerical Study of Shock Waves Interaction at Irregular Reflection in Steady Gas Flows” Mr. MISHCHENKO, Dmitry: “Excitation and Evolution of Goertler Instability Modes in Boundary-layer Flows” Mr. ALEKSEEV, Anon: “Experimental Research of Thermal Stability of Heat-Resistant Materials” Mr. YADRENKIN, Mikhail: “MHD-Control of a Shock-Wave Structure Generated by the Flat Plate” Mr. KIRILLOVSKY, Stas: “Numerical Simulation of Nonequilibrium Flow over a Plate in Aerodynamic Tunnel” Mr. POLIVANOV, Pavel: “Effect of the Local Wall Cooling/Heating on the Hypersonic Boundary Layer Stability and Transition”	Akademgorodok Dom Uchenych Malyj Zal
16:00	Visit of ITAM Institute of Theoretical and Applied Mechanics	Institute of Theoretical and Applied Mechanics
17:30	Transfer to Hotel	

18:15	Dinner
20:00	Cultural Programme (Bowling)

September 25, Wednesday

08:45	Transfer to the University	
09:30	DWIH Moskau Deutsches Haus für Wissenschaft und Innovation German Centre for Research and Innovation Dr. Gregor BERGHORN, Managing Director	<i>NSTU, Conference Hall</i>
10:00	ROSMU - Russian Union of Young Scientists Dr. Konstantin VAZHDAEV Head of the International Department of RoSMU, Bashkortostan	
10:30	Council of Young Scientists of the Russian Academy of Sciences, Siberian Branch Dr. Julia SERDYUKOVA Deputy Chair of the Council	
11:00	Coffee Break	
11:15	RFFI-Russian Foundation for Basic Research Funding Programmes for Young Scientists Dr. Irina ZHURBINA Head of Youth Programs Department	
12:00	Deriving Turbulent Scaling Laws From First Principles – A Change In Paradigm And Its Importance For Turbulence Prediction Prof. Dr.-Ing. Martin OBERLACK Institute of Fluid Dynamics, Darmstadt University of Technology - Discussion –	
13:00	Lunch	<i>Dining Hall</i>

14:00

Plenary Lecture

Prof. Dr. Vadim LEBIGA

Chair of Aerodynamics, NSTU,
International Centre of Aerophysical Research,
Institute of Theoretical and Applied Mechanics

- *Discussion* –

15:00

Coffee Break

15:15

Short Lectures of Young Researchers

Chair:

- Prof. Dr.-Ing. Martin OBERLACK
Darmstadt University of Technology
- Prof. Dr. Vadim LEBIGA
Chair of Aerodynamics, NSTU,
International Centre of Aerophysical Research,

Mr. PACHOMOV, Maksim: “Numerical Modelling of Flow Patterns, Turbulence Modification and Heat Transfer in Droplet-laden Flow in a Separated Subsonic Flow”

Mr. ZVERKOV, Ilya: “Aerodynamic Performance Improvement of MAV Wings by Streamwise Structuring of Boundary Layer”

Ms. WACLAWCZYK, Marta: “Description and Modelling of Turbulence as a Stochastic Field”

Mr. KLEMM, David: “Numerical Simulation”

Mr. HAGEBÖCK, Stephan: “Search for the Higgs-Boson with ATLAS”

Mr. PONIAEV, Sergey: “Blackout Mitigation in a Plasma Layer Near a High-speed Body in ExB Fields”

Mr. NIGMATZYANOV, Vladislav: “Simulation of Working Processes in Gas-discharge Chamber of High-frequency Ion Engine”

Mr. DESYATNIK, Pavel: “Criterion to Select Optimum Directional Control Sensitivity for Modern Transport Aircraft”

Ms. SHIRYAEVA, Anna: “Technology and Code for Numerical Simulation of Different Combustion Types in High-speed Viscous Gas Turbulent Flows”

Mr. ANISIMOV, Kirill: "CFD Application for Engine Aerodynamic Design"

Mr. MARITSKIY, Nikolay: "Modeling of Thermo-mechanical Properties of Materials Used in the Aerospace Industry"

Ms. OKOROKOVA, Nadezhda: "Hydronic Chemical Current Source as a Controlled Hydrogen Generator for Power Plants Based on Oxygen-hydrogen Fuel Cells"

Mr. SHATAEV, Pavel: "Algorithm for Calculation of Thin-walled Structures Made of Composite Materials for Discrete-continuum Models"

17:30 Transfer to Hotel

18:00 Dinner

19:00 Workshop of the German-Russian Forum:
Mrs. HOLST, Sabine: "Science Slam"

*Hotel Novosibirsk
Conference
Room "Nizhnyj
Novgorod"*

September 26, Thursday

08:45 Transfer to the University

09:30 **DAAD - Deutscher Akademischer Austauschdienst /**
German Academic Exchange Service

*NSTU,
Conference Hall*

Dr. Gregor BERGHORN
Head of DAAD-Office in Moscow

10:00 **Alexander von Humboldt-Foundation**

Prof. Dr. Andrey MOROZOV
Sobolev Institute of Mathematics, Novosibirsk

10:30 **DFG - Deutsche Forschungsgemeinschaft /**
German Research Foundation
"Fostering German-Russian Cooperation"
Dr. Jörn ACHTERBERG, DFG-Office Russia/CIS

10:45 **"Promoting Research Careers"**
Dr. Jürgen BREITKOPF
Group of Research Careers, DFG Bonn

11:30 Coffee Break

11:45	DFG - Deutsche Forschungsgemeinschaft / Funding Engineering Sciences in Germany Dr. Michael LENTZE, Programme Director, Group of Engineering Sciences, DFG Bonn	
12:30	Lunch	<i>Dining Hall</i>
13:30	Presentation of Helmholtz Association Future Short and Medium Range Aircraft Configurations Dipl.-Ing. Jörg FUCHTE German Aerospace Center / Deutsches Zentrum für Luft- und Raumfahrt (DLR) - <i>Discussion</i> -	
14:30	Presentation of Novosibirsk State University of Architecture and Civil Engineering (Sibstrin) Dr. Julia ZAKHAROVA Novosibirsk State University of Architecture and Civil Engineering (Sibstrin) Co-Lecturers: Ms. VALGER, Svetlana Mr. DANILOV, Maksim - <i>Discussion</i> –	
15:30	Coffee Break	
15:45	Short Lectures of Young Researchers Chair: <ul style="list-style-type: none"> • Dipl.-Ing. Jörg FUCHTE German Aerospace Center • Dr. Julia ZAKHAROVA Novosibirsk State University of Architecture and Civil Engineering (Sibstrin) Mr. VAFIN, Ruslan: “Improving operational characteristics of gas turbine engines parts by intensifying nitriding in a glow discharge” Mr. RYBIN, Andrey: “Solving different dynamic problems using same mass-stiffness aircraft model” Mr. KHASANOV, Azat: “Electrochemical dimensional	

processing of nanomaterials and coarse-grained analogues, corrosion and protection from corrosion”

Ms. GOTSELYUK, Tatyana: “Computational and experimental analysis of strength of bolted composite joints in airframes”

Mr. CIAMPA, Pier: “Design and Optimization of Unconventional Aircraft Configurations in a Distributed Design Environment”

Mr. TKACHENKO, Ivan: “«AIST»: a joint project of SSAU and SRC “TsSKB-Progress”

16:45 Transfer to Hotel

17:30 Dinner *Hotel Novosibirsk*

18:00 Walk to Theater

18:30 Ballet “Swan Lake” *Novosibirsk State
Theatre of Opera
and Ballet*

September 27, Friday

08:45 Transfer to the University

09:30 **Early German-Russian Scramjet
Technology Development (1993-1995)** *Novosibirsk State
Technical
University*

Prof. Dr. Rainer WALTHER
MTU Aero Engines AG, Munich

10:30 **Using Virtual Reality Methods for Space Simulators**

Dr. Stas KUZIKOVSKY,
Institute of Automation and Electrometry, Novosibirsk,
Corporation "SoftLab-NSK"

11:30 Coffee Break

11:45 **Short Lectures of Young Researchers**

Chair:

- Prof. Dr. Rainer WALTHER
MTU Aero Engines AG
- Dr. Stas KUZIKOVSKY,
Institute of Automation and Electrometry

Mr. SOKOLENKO, Igor: "Development of New Radiation Protective Polymeric Composition Material of Space Type"

Ms. CHERKASHINA, Natalya: "Effect of Vacuum Ultraviolet to the Thermostatic Properties of Polystyrene Composites"

Mr. BOBIN, Konstantin, Mr. ZHELOBKOV, Vladimir: "The Application Experience of Superplasticity and Creepage Effects for Aircraft Components Production Made of Sheet Metal and Plates"

Mr. RYNGACH, Nikolay: "Pulse Magnetic Forming"

Ms. MORZHIKHINA, Alyona: "Heat and Mass Transfer in Space Flight Condition"

13:00 Lunch *Dining Hall*

14:00 **Planning International Scientific Careers - Best Practice from Freie Universität Berlin**

Tobias STÜDEMANN, Head of the Liaison Office of Freie Universität Berlin, Moscow

15:00 Panel Discussion
"Prospects for Young Researchers: What can be expected of Research Organizations?"

Invited panelists:

Young Russian and German Researchers,
Representatives of DAAD, DFG, ROSMU, SB RAS,
YRAS, NSTU

Chair:

Tobias STÜDEMANN, Head of the Liaison Office of Freie Universität Berlin, Moscow

16:00 **Closing remarks**
Dr. Gregor BERGHORN,
Managing Director DWIH Moscow

16:30 **Technical questions**
Departure of Participants

18:00 Dinner *Hotel
Novosibirsk*