

Program: SFB 880 Final Symposium

Location: Automotive Research Centre Niedersachsen, Hermann-Blenk-Str. 42, 38108 Braunschweig

Tuesday, 17. December 2019

08:00 - 09:00 Registration at the foyer of the Automotive Research Centre Niedersachsen, Hermann-Blenk-Str. 42, 38108 Braunschweig

	NFF seminar room	Room Volkswagen 1	Room Volkswagen 2
09:00 - 09:15	Opening		
09:15 - 09:55	Plenary session 1: <i>Unconventional applications and new approaches for flow control</i> , Arvin Shmilowich (Boeing)		
09:55 - 10:05	<i>Room change</i>		
		Structure Design (Chair: P. Horst)	Active Flow Control I (Chair: R. Radespiel)
10:05 - 10:35		<i>Evolutionary optimization methods applied to morphing aircraft structures</i> , Klaus Wolf, Andreas Hauffe (TU Dresden)	<i>A Brief Overview on Past Research on Coanda Assisted STOL Transport Aircraft</i> , Jochen Wild (DLR)
10:35 - 11:05		<i>Large-displacement Morphing Wing Leading Edge Droop Nose: Optimization, Manufacture and Instrumentation</i> , Srinivas Vasista, Felix Nolte, Hans Peter Monner, Peter Horst, Johannes Riemenschneider, Ralf Keimer (DLR, TU Braunschweig)	<i>Concepts for an actuation system for effective flow control of an internally blown Coanda flap</i> , Peter Wierach, Jan Petersen, Christian. Behr, Michael Sinapius (DLR, TU Braunschweig)
11:05 - 11:35		<i>Large-displacement Morphing Wing Leading Edge Droop Nose: Structural Concept, Testing and Systems Integration</i> , Felix Nolte, Srinivas Vasista, Peter Horst, Hans Peter Monner (TU Braunschweig, DLR)	<i>Micro sensor system for active flow control</i> , Jan Niklas Haus, Martin Schwerter, Anke Vierheller, Marcel Gäding, Monika Leester-Schädel, Andreas Dietzel (TU Braunschweig)
11:35 - 12:05		<i>Efficient analysis of interlaminar stress fields in curved composite laminates</i> , Andreas Kappel, Christian Mittelstedt (TU Darmstadt)	<i>Active flow control experiments on a high-lift configuration</i> , Richard Semaan, Yosef El Sayed, Stefan Loges, Bernd R. Noack, Rolf Radespiel (TU Braunschweig, CRNS-LIMSI)
12:05 - 12:35		<i>Design Analysis of Active High Lift CFRP Wing Configurations via Fluid-Structure Interaction Simulation</i> , Fabian Runge, Kay Sommerwerk, Michael Rohdenburg, Matthias C. Haupt (TU Braunschweig)	<i>Turbulence Control—Better, Faster and Easier with Machine Learning</i> , Bernd R. Noack, Guy Cornejo Maceda, Nan Deng, Francois Lusseyran, Luc Pastur, Ruiying Li, Marek Morzyński, Dewei Fan, Yu Zhou, Eurika Kaiser and Steven L. Brunton (CRNS-LIMSI, Harbin Inst. of Tech., UW)
12:35 - 13:35	Lunch break		
		Room Volkswagen 1	Room Volkswagen 2
13:35 - 14:15	Plenary session 2: <i>Techniques for passive flow and noise control</i> , Mahdi Azarpeyvand (Univ. Bristol)		
14:15 - 14:35	<i>Coffee break</i>		
		Aero- & vibroacoustics I (Chair: J. Delfs)	Engine Design and Integration (Chair: C. Bode)
14:35 - 15:05		<i>Aeroacoustic Benefit of Porous Materials on a Circulation Control Airfoil</i> , Lennart Rossian, Karl-Stephane Rossignol, Roland Ewert, Michaela Herr and Jan W. Delfs (DLR)	<i>Aerodynamics of an ultra-high bypass ratio fan for an over-wing mounted engine</i> , Daniel Giesecke, Jens Friedrichs (TU Braunschweig)
15:05 - 15:35		<i>Wave-resolving numerical prediction of passenger cabin noise under realistic loading</i> , Christopher Blech, Christina Appel, Roland Ewert, Jan Delfs, Sabine C. Langer (TU Braunschweig, DLR)	<i>Aerodynamic design and analysis studies for over-the-wing pylon-mounted UHBR engines on an STOL aircraft concept</i> , Fabian Lange, Ralf Rudnik, Arno Ronzheimer, Luciana Savoni (DLR)
15:35 - 16:05		<i>Surrogates for Vibro-Acoustics Aircraft Models with Random Input Data</i> , Shreyas Guruprasad, Prem Ratan Mohan Ram, Ulrich Römer, Christopher Blech, Sabine C. Langer (TU Braunschweig)	<i>Intake Design and Airframe Integration Sensitivities for an Over-The-Wing Mounted UHBR-Turbofan</i> , Constance Heykena, Jens Friedrichs (TU Braunschweig)
16:05 - 16:35		<i>Adjoint-based CAA applications - source identification and modelling</i> , Mathias Lemke, Jörn Sesterhenn (TU Berlin)	<i>Multibody Modelling of an UHBR-Engine and Its Influence on the Dynamics of a Coanda Wing</i> , Martin Schmalz, Holger Hennings (DLR)
16:35 - 17:05		<i>Air curtains, active flow control for noise reduction</i> , Gareth Bennett (Trinity College)	<i>Active Flow Separation Control on a Generic UHBR High-Lift Configuration by Means of Suction and Oscillatory Blowing</i> , Junaid Ullah, Thorsten Lutz (Uni. Stuttgart)
18:30	Meet-up at the Christmas market		
20:00	Symposium dinner at Gastwerk Rodizio		

Wednesday, 18. December 2019

	NFF seminar room	Room Volkswagen 1	Room Volkswagen 2
09:00 - 09:15	Opening		
09:15 - 09:55	Plenary session 3: <i>Use of MDO techniques for the design of morphing aircraft</i> , Sergio Ricci (Politecnico di Milano)		
09:55 - 10:05	<i>Room change</i>		
		Flight Dynamics and Aircraft Design (Chair: R. Rudnik)	Methods for Porous Materials (Chair: S. Langer)
10:05 - 10:35		<i>SFB 880 Vehicle Concepts and Comparative Noise Assessment</i> , Jason Blinstrub, Lothar Bertsch, Wolfgang Heinze (DLR, TU Braunschweig)	<i>Production and characterization of porous materials with customized acoustic and mechanical properties</i> , Joachim Rösler, Jörn Tychsen (TU Braunschweig)
10:35 - 11:05		<i>Aerodynamic and flight dynamics analysis of a STOL propeller aircraft with active high lift and control surface systems</i> , Dennis Keller, Ralf Rudnik (DLR)	<i>Massively Parallel Lattice Boltzmann Simulations of aeroacoustics over and inside porous media</i> , Konstantin Kutscher, Martin Geier, Manfred Krafczyk (TU Braunschweig)
11:05 - 11:35		<i>Understanding the flight mechanics of active high-lift aircraft configurations</i> , Yannik Beyer, Meiko Steen, Nicolas Fezans (TU Braunschweig, DLR)	<i>OLES for airframe noise reduction by porous materials</i> , Rinie A.D. Akkermans, Varun B. Ananthan, Paul Bernicke, Jürgen Dierke, Roland Ewert (TU Braunschweig, DLR)
11:35 - 12:05		<i>A Multifidelity Approach for Uncertainty Propagation in Flight Dynamics</i> , Shanza A. Zafar, Nicolas Fezans, Ulrich Römer (DLR, TU Braunschweig)	<i>VRANS modeling and validation of active high-lift flows with porous surface segments</i> , Pradeep Kumar, Rolf Radespiel (TU Braunschweig)
12:05 - 12:35		<i>Aeroelastic instabilities of wings with active high-lift devices - A reduced-order model</i> , Nora Neuert, Ian Krukow, Dieter Dinkler (TU Braunschweig)	<i>Theoretical and numerical modelling of metamaterials tailored to aeroacoustic applications</i> , Umberto lemma (Uni. Roma)
12:35 - 13:35	Lunch break		
		Turbomachinery (Chair: J. Seume)	Active Flow Control II (Chair: R. Semaan)
13:35 - 14:15	Plenary session 4: <i>Towards faster design cycles through gradient-based optimization</i> , Tom Verstraete		
14:15 - 14:35	<i>Coffee break</i>		
14:35 - 15:05		<i>A review of turbomachinery noise: from analytical models to high-fidelity simulations</i> , Stephane Moreau (Uni. Sherbrooke)	<i>Wavy Drag Reduction Works</i> , Wolfgang Schröder, Marian Albers, Daniel Fernex, Richard Semaan, Bernd R. Noack (RWTH Aachen, TU Braunschweig, CRNS-KIMSI)
15:05 - 15:35		<i>Experimental Validation of an Optimized Design Process for Transonic Mixed-Flow Compressors</i> , Niklas Maroldt, Felix Kauth, Jörg Seume (LU Hannover)	<i>Circulation control experiments on a vertical tail</i> , Peter Scholz, Vickram Singh (TU Braunschweig)
15:35 - 16:05		<i>Optimization of Integrated Compressor Drives for Electrically Powered High-Lift Systems</i> , Gerrit Narjes, Jan-Kaspar Müller, Matthias Kalla, Axel Mertens, Bernd Ponick (LU Hannover)	<i>Effects of Pulsed Jet Actuation on the Performance of a Vertical Stabilizer</i> , Stephan Löffler, Julien Weiss (TU Berlin)
16:05 - 16:35		Efficiency of active flow control in an unsteady stator vane flow field, Simon Steinberg, Rudibert King (TU Berlin)	Manipulation of Leading-Edge Vortex Flow, Andrei Buzica, Christian Breitsamter (TU München)
16:35 - 17:05		<i>Towing tank experiments for high Reynolds number unsteady aerodynamic phenomena under realistic boundary conditions</i> , Christian Oliver Paschereit, Christian Navid Nayeri, Marvin Jentszsch, Jonathan Tschäpe (TU Berlin)	
	End of symposium		