Leading Graduate School Program on Global Safety
Tohoku University-DLR Workshop
– Extreme Robotics and Aviation Safety Frontier –

Date:	13 (Mon) - 14 (Tue), October, 2014	
Place:	13 (Mon):	Sakura Hall, Katahira Campus, Tohoku University
	14 (Tue):	Extreme robotics session – Aobayama Campus
		Aviation safety frontier session – Large lecture room, 5th floor, 2nd-building, Institute of Fluid Science, Katahira Campus, Tohoku University

Program

13 (Mon)

Time	Title & speaker
09:30 – 09:45	Opening remarks, Prof. Yoshida, Dr. Reinke
09:45 – 10:30	Significance of dynamic wind-tunnel testing in nonlinear flight regime Profs. Asai, Numata, Jiang Department of Aerospace Engineering, Tohoku University Profs. Obayashi, Shimoyama Institute of Fluid Science, Tohoku University
10:30 – 10:45	*Coffee break*
10:45 – 11:30	Airborne measurements of ice particles in contrails and cirrus clouds with the DLR research aircraft Falcon and HALO Dr. Tina Jurkat Institute of Atmospheric Physics, DLR
11:30 – 12:15	Data assimilation of lidar/radar observations at airports for aviation safety Prof. Obayashi, Dr. Misaka, Mr. Kikuchi Institute of Fluid Science, Tohoku University
12:15 – 13:30	*Lunch break*
13:30 – 14:15	Robotics and mechatronics research activities at DLR Dr. Alin Albu-Schäffer Institute of Robotics and Mechatronics, DLR
14:15 – 15:00	Robotics for extreme and uncertain environments Prof. Yoshida Department of Aerospace Engineering, Tohoku University

15:00 – 15:15	*Coffee break*
15:15 – 16:15	International Forum for Aviation Research (IFAR) session ・ Introduction of IFAR and Young Researchers Networking activity (5 mins.) ・ Report from Tohoku University student – Research training experience at DLR by Mr. Sugioka (10 mins.) ・ Report from JAXA researcher – International research experience by Dr. Matayoshi (10 mins.) ・ Open discussion (35 mins.) "International experience and networking for researchers" – Why 'international' for young researchers now? – What can we obtain/achieve? – Inquiry/Request to IFAR
16:15 – 16:45	Short presentation for poster indexing (3 min) P1. Flow separation analysis of a shrouded rotor inlet Mr. Otsuka P2. Development of sample-return device for obtaining volcanic products Mr. Yajima P3. Experimental evaluation of gripping characteristics based on frictional theory for ground grip locomotion robot on asteroid Mr. Yuguchi P4. Unsteady flow field around a rolling delta wing at high angle of attack Mr. Senzaki P5. Visualization of transonic buffet by using unsteady PSP Mr. Sugioka P6. Investigation of dynamic stall characteristics of a flat-plate wing in pitching motion Mr. Ambo P7. Development status of the 0.3-m magnetic suspension and balance system at Tohoku University Mr. Taniguchi P8. Total pressure control in intermittent supersonic wind tunnel for a magnetic suspension and balance system Mr. Yokoyama P9. Real-time prediction of low-level atmospheric turbulence by data assimilation Mr. Kikuchi
16:45 – 18:00	Poster session & reception

14 (Tue), Extreme robotics session

Time	Title & Speaker
09:00 –	TBD

14 (Tue), Aviation safety frontier session "Aviation Safety and Climate Impact"

Time	Title & Speaker
09:00 – 09:05	Greeting from organizers Profs. Obayashi/Asai
09:05 – 10:05	HALE UAS for national resilience (keynote lecture) Dr. Harada (JAXA)
10:05 – 10:35	Research of aerodynamics on JAXA experimental airplanes to connect real-flight and ground testing Mr. Nakakita (JAXA)
10:35 – 10:50	*Coffee break*
10:50 – 11:20	Measuring stability derivative in a wind tunnel using magnetic suspension balance system Mr. Sugiura (JAXA)
11:20 – 11:50	Novel weather observation technologies for next integrated terminal weather system (ITWS) Dr. Yoshikawa (JAXA)
11:50 – 13:00	*Lunch break*
13:00 – 13:30	Development of low-level turbulence advisory system for aircraft operation Dr. Matayoshi (JAXA)
13:30 – 14:00	Global air traffic modeling for climate assessment of routing strategies Dr. Yamashita (DLR)
14:00 – 14:30	Detection of convection and waves in the free atmosphere using a 3D-scanning coherent Doppler lidar Prof. Fujiyoshi (Hokkaido Univ.)
14:30 – 14:45	*Coffee break*
14:45 – 15:15	Global analysis of cloud microphysics by space-borne active sensors: from A-train to EarthCARE Prof. Okamoto (Kyushu Univ.)

15:15 – 15:45	Contrail properties inferred from satellite-based measurements Prof. Iwabuchi (Tohoku Univ.)
15:45 – 16:15	Evaluation of microphysical processes of a cloud-resolving model using in-situ and satellite observations Prof. Shinoda (Nagoya Univ.)
16:15 – 16:20	Closing remarks Profs. Obayashi/Asai
16:20 – 17:20	Facility tour (magnetic suspension and balance system, Mars wind tunnel, ballistic range facility)