

5-th International Workshop

**Computational Experiment
in AeroAcoustics**

September 19-22, 2018
Svetlogorsk
Kaliningrad region, Russia

PROGRAM

MOSCOW - 2018

ORGANIZER

Keldysh Institute of Applied Mathematics of Russian Academy of Sciences (KIAM), Moscow, Russia

with assistance from

Central Aerohydrodynamical Institute (TsAGI), Zhukovsky, Russia

Immanuel Kant Baltic Federal University, Kaliningrad, Russia

Municipal Administration of Svetlogorsk, Kaliningrad region, Russia

FINANCIAL SUPPORT



Russian Foundation of Basic Research (Grant No. 18-01-20074)

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September 18th, Tuesday – Day of Arrival	
19:00-20:00	Registration of participants of Fifth International Workshop <i>Lobby, Hotel "Russ"</i>
September 19th, Wednesday	
8:30-9:00	Registration of participants of Fifth International Workshop <i>Lobby, Maritime Exhibition Center, Yantar-Hall</i>
9:00-9:30	Opening Ceremony of Fifth International Workshop <i>Conference Hall , Maritime Exhibition Center</i>
9:30-17:15	Joint Sessions1-4 of Seventh Russian Conference and Fifth International Workshop <i>Conference Hall , Maritime Exhibition Center</i>
18:00-22:00	Welcome Reception <i>Pavilion, Hotel "Russ", Vereschagina St., 10</i>
September 20th, Thursday	
9:30-16:35	Joint Sessions5-8 of Seventh Russian Conference and Fifth International Workshop <i>Conference Hall, Maritime Exhibition Center</i>
17:00-..	Walking Tour around Svetlogorsk <i>Meeting point at the entrance of Maritime Exhibition Center</i>
September 21st, Friday	
9:30-15:30	Joint Sessions 9-11 of Seventh Russian Conference and Fifth International Workshop <i>Conference Hall, Maritime Exhibition Center</i>
15:30-15:40	Group Photo <i>Meeting point at the entrance of Maritime Exhibition Center</i>
16:00-17:30	Round-Table Discussions Collection of CEAA2018 Surveys and Voting ballots <i>Conference Hall, Maritime Exhibition Center</i>
19:30-24:00	CEAA2018 Dinner Closing Ceremony of Russian Conference and International Workshop <i>Bar "BARRE", Lenina St., 11, Yantar-Hall, basement level to the left</i>
September 22nd, Saturday	
9:00-19:00..	CEAA2018 OpenAirDay Bus journey: Kaliningrad (from old town to post-footballWorldCup city), lunch at Castle Nesselbeck, Sea shore walking in Pionersky (Neukuhren) Discussions, negotiations, conversations, ... <i>Departure of buses from Hotel "Universal"</i>
September 23rd, Sunday – Day of Departure	

September 19th, Wednesday	
9:30-11:00	Session 1 Chairmen: Sergey Timushev , <i>Moscow Aviation Institute, Russia</i> <i>Hall of Maritime Exhibition Center</i>
9:30-10:20 Invited lecture	AEROACOUSTICS CHARACTERIZATION OF TURBO-MACHINERY Mats ABOM <i>KTH Royal Institute of Technology, Stockholm, Sweden</i>
10:20-10:40	THE APPLICATION OF HARMONIC METHODS FOR THE CALCULATION OF THE TONE NOISE PROPAGATION THROUGH INLETS AND NOZZLES OF TURBOFANS I.M. Druzhinin, V.I. Mileshein, A.A. Rossikhin <i>Central Institute of Aviation Motors (CIAM), Moscow, Russia</i>
10:40-11:00	EXPERIMENTAL STUDY IN THE ANECHOIC CHAMBER DIFFERENCE IN DIAGRAMS OF SOUND RADIATION DIRECTIVITY FROM THE OPEN END OF THE AIR INLET WHEN MODELING STATIC AND FLIGHT CONDITIONS M.S. Ipatov, V.F. Kopiev, A.E. Kruglyaeva, N.N. Ostrikov , M.A. Yakovets <i>Central Aerohydrodynamic Institute (TsAGI), Moscow, Russia</i>
11:00-11:20	<i>Coffee-break</i>
11:20-12:40	Session 2 Chairman: Alexey Kudryavtsev , <i>ITAM SB RAS, Novosibirsk, Russia</i> <i>Hall of Maritime Exhibition Center</i>
11:20-11:40	BROADBAND NOISE PREDICTION OF A DUCTED AXIAL FAN BY MEANS OF A DISCONTINUOUS GALERKIN BASED CAA SOLVER Jan W. Delfs, Roland Ewert, Lev Liberson , Markus Lummer, Michael Mössner <i>Institute of Aerodynamics and Flow Technology, Technical Acoustics, German Aerospace Center (DLR), Braunschweig, Germany</i>
11:40-12:00	INFLUENCE OF THROTTLING AND SYNTHETIC JETS ON SPECTRAL PROPERTIES AND PRESSURE PULSATIONS LEVEL IN THE AIR INTAKE INTEGRATED WITH THE AIRFRAME USING RANS/ILES METHOD L. Benderskiy ¹ , D. Lubimov ¹ , A. Terekhova ¹ ¹ <i>Central Institute of Aviation Motors, Moscow, Russia</i>
12:00-12:20	DIRECT NUMERICAL SIMULATION OF SHOCK WAVE / TRANSITIONAL BOUNDARY LAYER INTERACTION D.V. Khotyanovsky , A.N. Kudryavtsev <i>Khristianovich Institute of Theoretical and Applied Mechanics, Siberian Branch of the Russian Academy of Sciences, Novosibirsk, Russia</i>
12:20-12:40	THE CHARACTERISTICS AND SPATIAL STRUCTURE OF WALL PRESSURE FLUCTUATIONS IN A FLOW OVER STEPS A.Yu. Golubev, S.V. Kuznetsov <i>Central Aerohydrodynamic Institute (TsAGI), Moscow, Russia</i>
12:40-14:00	<i>Lunch</i>
14:00-15:30	Session 3 Chairman: Alexey Mironov , <i>CIAM, Moscow, Russia</i> <i>Hall of Maritime Exhibition Center</i>
14:00-14:50 Keynote presentation	NEXT STEPS IN WIND TUNNEL AEROACOUSTICS: MEASUREMENTS AT FLIGHT-REYNOLDS NUMBERS Thomas AHLEFELDT <i>German Aerospace Center (DLR), Institute of Aerodynamics and Flow Technology, Goettingen, Germany</i>
14:50-15:10	BACKGROUND ACOUSTIC DISTURBANCES IN HIGH SPEED WIND TUNNELS V.A. Lebiga ^{1,2} , V.N. Zinovyev ¹ , A.Yu. Pak ¹ ¹ <i>Khristianovich Institute of Theoretical and Applied Mechanics SB RAS, Novosibirsk, Russia</i> ² <i>Novosibirsk State University, Novosibirsk, Russia</i>
15:10-15:30	AEROACOUSTIC LOW-SPEED WIND TUNNEL FACILITY FOR CFD VALIDATION V.V. Pakhov , S.A. Mikhailov <i>KNRTU-KAI, Kazan, Russia</i>
15:30-15:50	<i>Coffee-break</i>
15:50-17:10	Session 4 Chairman: Ulf Michel , <i>CFD Software E+F GmbH, Berlin, Germany</i> <i>Hall of Maritime Exhibition Center</i>
15:50-16:10	ADJOINT-BASED SOUND SOURCE IDENTIFICATION Mathias Lemke, Jörn Sesterhenn <i>Technische Universität Berlin, Berlin, Germany</i>
16:10-16:30	PREDICTION OF TURBULENCE-CASCADE INTERACTION NOISE USING MODAL APPROACH P. Chaitanya , P. Joseph

	<i>University of Southampton, UK</i>
16:30-16:50	EXPERIMENTAL AND THEORETICAL INSTABILITY WAVES NOISE SHIELDING INVESTIGATIONS Stanislav L. Denisov , Nikolay. N. Ostrikov <i>Central Aerohydrodynamic Institute (TsAGI), Moscow, Russia</i>
16:50-17:10	MISMATCHING EIGEN-MODE BASES IN INDUCT SOUND FIELD ANALYSIS WITH INHOMOGENEOUS MEAN FLOW Mirko Spitalny , Ulf Tapken <i>German Aerospace Center (DLR), Berlin, Germany</i>
18:00-22:00	<i>Welcome Reception</i> <i>Pavilion, Hotel "Russ"</i>

September 20th, Thursday	
9:30-11:00	Session 5 Chairman: Victor Kopiev , <i>TsAGI, Moscow, Russia</i> <i>Hall of Maritime Exhibition Center</i>
9:30-10:20 Invited lecture	JET AEROACOUSTICS: SOME INSIGHTS FROM NUMERICAL EXPERIMENTS Sanjiva LELE <i>Center for Turbulence Research, Department of Mechanical Engineering, Stanford University, Stanford, USA</i>
10:20-10:40	SYNTHETIC JETS INFLUENCE ON NOISE LEVEL AND ITS SPECTRAL PROPERTIES FOR OFF-DESIGN SUPERSONIC JET USING RANS/ILES-METHOD L. Benderskiy, D. Lubimov, N. Polnyakov <i>Central Institute of Aviation Motors, Moscow, Russia</i>
10:40-11:00	COMPARISON OF SOME POPULAR LOW-ORDER JET NOISE PREDICTION SCHEMES FOR HEATED AND UNHEATED JETS V. Gryazev, S. Karabasov <i>Queen Mary University of London, UK</i>
11:00-11:20	<i>Coffee-break</i>
11:20-12:40	Session 6 Chairman: Sergey Karabasov , <i>Queen Mary University of London, UK</i> <i>Hall of Maritime Exhibition Center</i>
11:20-11:40	<i>ON THE POSSIBILITY OF ACTIVE CONTROL OF INSTABILITY WAVES IN UNEXCITED TURBULENT JETS</i> V.F. Kopiev , G.A. Faranosov, S.A. Chernyshev, O.P. Bychkov <i>Central Aerohydrodynamic Institute (TsAGI), Moscow, Russia</i>
11:40-12:00	ON THE DOMINATING INFLUENCE OF THE LARGE-SCALE MOTION IN A JET ON ITS PRESSURE NEAR FIELD AND THE ACOUSTIC FAR FIELD Felix Kramer, Ulf Michel , Charles Mockett <i>CFD Software E+F GmbH, Berlin, Germany</i>
12:00-12:40	INVESTIGATION OF THE ACOUSTIC ACTUATORS CREATION POSSIBILITY FOR CONTROLLING FLOW IN SWIRLING JET S.Yu. Krashenninikov, A.K. Mironov , P.D. Toktaliev <i>Central Institute of Aviation Motors, Moscow, Russia</i>
12:20-12:40	GPU CABARET SOLUTIONS FOR THE COJEN JET NOISE EXPERIMENT Anton P. Markesteijn ¹ , Sergey A. Karabasov ^{1,2} ¹ <i>GPU-prime Ltd, Cambridge, UK</i> ² <i>Queen Mary University of London, UK</i>
12:40-14:00	<i>Lunch</i>
14:00-15:20	Session 7 Chairman: Xin Zhang , <i>HKUST, Hong Kong, China</i> <i>Hall of Maritime Exhibition Center</i>
14:00-14:15 Sponsor presentation	OVERVIEW, STRATEGIES AND CHALLENGES IN POST-PROCESSING: EXPLORING LARGE DATASETS, WORKFLOW AUTOMATION AND ANALYZING COLLECTIONS OF FILES Antoine LIGIER <i>Genias Graphics GmbH & Co KG, Regenstauf, Germany</i>
14:15-14:35	TOWARDS FORCED EDDY SIMULATION FOR INSTALLED NOZZLE-WING CONFIGURATIONS Roland Ewert, Andrej Neifeld <i>Institute of Aerodynamics and Flow Technology, Technical Acoustics, German Aerospace Center (DLR), Braunschweig, Germany</i>
14:35-14:55	A METHOD OF JET-WING INTERACTION NOISE PREDICTION AT LOW FREQUENCIES O.P. Bychkov ^{1,2} , G.A. Faranosov ¹

	¹ Central Aerohydrodynamic Institute (TsAGI), Moscow, Russia ² Moscow Institute of Physics and Technology, Dolgoprudny, Moscow region, Russia
14:55-15:15	A PECULIAR CASE OF FAN-WING ACOUSTICS Vladimir V. Golubev Embry-Riddle Aeronautical University, Daytona Beach, USA
15:15-15:35	TOWARDS AFFORDABLE CAA SIMULATIONS OF AIRLINER'S WINGS WITH DEPLOYED HIGH-LITF DEVICES V. Bobkov, A. Gorobets , A. Duben, T. Kozubskaya, V. Tsvetkova Keldysh Institute for Applied Mathematics RAS, Moscow, Russia
15:35-15:55	Coffee-break
15:55-16:15	A SPLITTING METHOD FOR AEROACOUSTIC SIMULATIONS Yoshihiro Kato ¹ , Igor Menshov ^{2,3} ¹ Toyota Central Research & Development Labs., Inc., Aichi, Japan ² Keldysh Institute for Applied Mathematics RAS, Moscow, Russia ³ SRISARAS, Moscow, Russia
16:15-16:35	ACOUSTICS DESIGN SENSITIVITY ANALYSIS FOR THE NOISE CONTROL AND MINIMIZATION ON LANDING GEARS Amine Ghouali ¹ , Antoine Boillot ¹ , Maxime Lebrun ¹ , Neil Price ² , Quentin Bouvy ¹ ¹ Safran Landing Systems, Vélizy, France ² Safran Landing Systems, Gloucester, UK
17:00	Walking Tour around Svetlogorsk Meeting point: entrance to Maritime Exhibition Center

September 21st, Friday	
9:30-11:00	Session 8 Chairman: Mikhail Strelets , SPbPU, St-Petersburg, Russia Hall of Maritime Exhibition Center
9:30-10:20 Invited lecture	ON THE IDENTIFICATION OF SOLID SOUND SOURCES VIA THE FLOWCS WILLIAMS – HAWKINGS INTEGRAL Philippe SPALART The Boeing Company, Seattle, USA
10:20-10:40	A COMPARISON OF ACOUSTIC FAR-FIELD PREDICTION METHODS FOR TURBULENT FLOWS Siyang Zhong, Xin Zhang The Hong Kong University of Science and Technology, Hong Kong, China
10:40-11:00	ACOUSTIC MODEL OF A HELMHOLTZ RESONATOR UNDER GRAZING TURBULENT FLOW Lewin Stein, Jörn Sesterhenn Technische Universität Berlin, Berlin, Germany
11:00-11:20	Coffee-break
11:20-12:40	Session 9 Chairman: Vladimir Golubev , Embry-Riddle Aeronautical University, USA Hall of Maritime Exhibition Center
11:20-11:40	MECHANISMS AND MODELLING OF UNDULATED LEADING-EDGE AEROFOILS J.W. Kim, J.M. Turner University of Southampton, Southampton, UK
11:40-12:00	SECONDARY NOISE SOURCES IN A VORTICAL FLOW INTERACTING WITH AN UNDULATED AEROFOIL J.W. Kim, J.M. Turner University of Southampton, Southampton, UK
12:00-12:20	ON COMPUTATIONAL AERODYNAMICS AND AEROACOUSTICS OF MOVING AIRFOILS Y. Sun ¹ , S. Zhong ¹ , X. Zhang ¹ , X. Huang ² , I.V. Abalakin ³ , N. Zhdanova ³ , T. Kozubskaya ³ ¹ Hong Kong University of Science and Technology, Hong Kong SAR, China ² Peking University, China ³ Keldysh Institute of Applied Mathematics RAS, Moscow, Russia
12:20-12:40	NOISE RADIATED BY AN OPEN CAVITY AT LOW MACH NUMBER J. Cante ¹ , A. Duben ² , A. Gorobets ² , O. Lehmkuhl ⁴ , R. Martin ⁵ , M. Soria ¹ ¹ Universitat Politècnica de Catalunya, Terrassa, Spain ² Keldysh Institute of Applied Mathematics of RAS, Moscow, Russia ⁴ Barcelona Supercomputing Center, Barcelona, Spain ⁵ Universitat Politècnica de Catalunya and SEAT, Terrassa, Spain
12:40-14:00	Lunch
14:00-15:40	Session 10 Chairman: Mikhail Zaitsev , TsAGI, Moscow, Russia

	<i>Hall of Maritime Exhibition Center</i>
14:00-14:50 Invited lecture	Charles HIRSCH <i>Vrije Universiteit Brussels, Belgium</i>
14:50-15:10	ON THE DEVELOPMENT OF NUMERICAL TECHNUQUE OF ROTOR AERACOUSTICS AND AERODIMAMICS CHARACTERISTICS IN FORWARD FLIGHT I.V. Abalakin ¹ , V.G. Bobkov ¹ , T.K. Kozubskaya ¹ , B.S. Kritsky ² , R.M. Mirgazov ² ¹ <i>KIAM RAS, Moscow, Russia</i> ² <i>Central Aerohydrodynamic Institute (TsAGI), Zhukovsky, Russia</i> РАЗВИТИЕ МЕТОДА РАСЧЕТА АЭРОДИНАМИЧЕСКИХ И АКУСТИЧЕСКИХ ХАРАКТЕРИСТИК НЕСУЩЕГО ВИНТА ВЕРТОЛЁТА В ГОРИЗОНТАЛЬНОМ ПОЛЁТЕ И.В. Абалакин ¹ , В.Г. Бобков ¹ , Т.К. Козубская ¹ , Б.С. Крицкий ² , Р.М. Миргазов ² ¹ <i>ИИПМ им. М.В. Келдыша РАН, г. Москва</i> ² <i>ЦАГИ им. проф. Н.Е. Жуковского, г. Жуковский, МО</i>
15:10-15:30	ACOUSTIC DETECTION OF HELICOPTER ROTOR OF HELICOPTER ROTOR ICING X. Chen ¹ , Q. Zhao ¹ , G.N. Barakos ² , A. Kusyumov ³ ¹ <i>Nanjing University of Aeronautics and Astronautics, Nanjing, China</i> ² <i>A University of Glasgow, Glasgow, UK</i> ³ <i>Laboratory 1, Kazan National Research Technical University, Kazan, Russia</i>
15:30-15:40	Group Photo
15:40-16:00	<i>Coffee-break</i>
16:00-17:30	Closing Session 11: Round-Table discussions <i>Hall, Maritime Exhibition Center</i>
19:30-24:00	CEAA2018 Dinner, Closing Ceremony <i>Bar "BARRE"</i>