

Fourth International Workshop

Computational Experiment in AeroAcoustics

September 21-24, 2016
Svetlogorsk
Kaliningrad region, Russia

PROGRAM

MOSCOW – 2016

ORGANIZER

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

with assistance of

Central Aerohydrodynamical Institute (TsAGI), Zhukovsky, Russia

Immanuel Kant Baltic Federal University, Kaliningrad, Russia

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TESIS

International Commission for Acoustics



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September, 20th, Tuesday – Day of Arrival	
19:00-20:00	Registration of participants of Fourth International Workshop <i>Lobby at Hotel “Russ”</i>
September, 21st, Wednesday	
8:30-9:00	Registration of participants of Fourth International Workshop <i>Lobby at Conference Hall "Oniks", Yantar-Hall</i>
9:00-9:30	Opening of Fourth International Workshop <i>Conference Hall "Oniks", Yantar-Hall</i>
9:30-17:05	Joint Sessions 1-4 of Sixth Russian Conference and Fourth International Workshop <i>Conference Hall "Oniks", Yantar-Hall</i>
20:00-23:00	Welcome Reception <i>Lobby at Yantar-Hall</i>
September, 22nd, Thursday	
9:30-16:45	Joint Sessions 5-8 of Sixth Russian Conference and Fourth International Workshop <i>Great Hall, Yantar-Hall</i>
17:00-18:30..	Walking Tour around Svetlogorsk <i>Meeting point at the entrance of Yantar-Hall at 17:30</i>
September, 23rd, Friday	
9:30-15:25	Joint Sessions 9-11 of Sixth Russian Conference and Fourth International Workshop <i>Conference Hall "Oniks", Yantar-Hall</i>
15:25-15:40	Group Photo <i>Meeting point at the entrance of Yantar-Hall at 15:25</i>
16:00-17:15	Round-Table Discussions Collection of CEAA2016 Forms and Voting ballots <i>Conference Hall "Oniks", Yantar-Hall</i>
19:00-24:00	CEAA2016 Dinner Closing Ceremony of Russian Conference and International Workshop <i>Pavilion at Hotel “Russ”</i>
September, 24th, Saturday	
13:00-24:00..	CEAA2016 Open Air Day Bus journey over the region (Yantarniy/Palmnicken, Zelenogradsk/Cranz), World Fireworks Championship 2016 Discussions, negotiations, conversations, ... <i>Departure of buses from Hotel “Universal” at 13:00</i>
September, 25th, Sunday – Day of Departure	

September 21st, Wednesday	
8:30-9:00	Registration of participants of Fourth International Workshop
9:00-9:30	Opening of Fourth International Workshop
9:30-10:55	Session 1 Chairman: Mikhail Zaitsev , <i>Central Aerohydrodynamic Institute (TsAGI), Moscow, Russia</i>
9:30-10:15 Invited lecture	SIMULATION OF AIRCRAFT INSTALLATION NOISE – A KEY TO LOW NOISE AIRCRAFT DESIGN Jan W. Delfs <i>German Aerospace Center (DLR), Institute of Aerodynamics and Flow Technology, Technical Acoustics, Germany</i>
10:15-10:35	AVIATION NONCOMPACT NOISE SOURCES SHIELDING IN PRESENCE OF THE MEAN FLOW: EXPERIMENTAL AND THEORETICAL INVESTIGATIONS S.L. Denisov , N.N. Ostrikov <i>Central Aerohydrodynamic Institute (TsAGI), Moscow, Russia</i>
10:35-10:55	COMMUNITY NOISE ASSESSMENT FOR AIRCRAFT WITH CROR ENGINES BASED ON NUMERICAL SIMULATIONS V.F. Kopiev ¹ , M.L. Shur ² , A.I. Travin ² , I.V. Belyaev ¹ , B.S. Zamtfort ¹ , Yu.V. Medvedev ¹ ¹ <i>Central Aerohydrodynamic Institute (CIAM), Moscow, Russia</i> ² <i>St.Petersburg Polytechnic University, St. Petersburg, Russia</i>
10:55-11:15	Coffee-break
11:15-12:35	Session 2 Chairman: Alexey Mironov , <i>Central Institute of Aviation Motors (CIAM), Moscow, Russia</i>
11:15-11:35	A TWO-LEVEL APPROACH FOR DESIGN OPTIMIZATION OF ACOUSTIC LINERS Nicolas R. Gauger , Emre Özkaya, Junis Abdel Hay <i>Kaiserslautern University of Technology, Chair for Scientific Computing, Kaiserslautern, Germany</i>
11:35-11:55	FREQUENCY DOMAIN METHOD OF MULTISTAGE TURBOMACHINE TONE NOISE CALCULATION V.I. Mileshein, S.V. Pankov, A.A. Rossikhin <i>Central Institute of Aviation Motors (CIAM), Moscow, Russia</i>
11:55-12:15	NUMERICAL MODELING OF TURBOMACHINERY TONAL NOISE IN SPACE WITH COMPLEX ACOUSTIC IMPEDANCE BOUNDARY CONDITIONS S.F. Timushev ¹ , V.N. Gavriluk ¹ , K.I. Volosenko ¹ , A.A. Aksenov ² ¹ <i>Moscow Aviation Institute (National Research University), Rocket Engines Department, Moscow, Russia,</i> ² <i>TESIS Ltd, Russia</i>
12:15-12:35	EXPERIMENTAL STUDY OF THE FLOW IN A DUAL-STREAM SUPERSONIC JET D.A. Gubanov, V.I. Zapryagaev , N.P. Kiselev, S.G. Kundasev, A.A. Pivovarov <i>Institute of Theoretical and Applied Mechanics SB RAS, Novosibirsk, Russia</i>
12:35-14:00	Lunch
14:00-15:25	Session 3 Chairman: Michael Dumbser , <i>University of Trento, Trento, Italy</i>
14:00-14:45 Invited lecture	COMPUTATIONAL AEROACOUSTICS METHODS FOR INDUSTRIAL APPLICATIONS Philippe Lafon <i>Ecole Centrale de Lyon - Univ. Lyon 2, CNRS/LaMSID, Electricité de France, France</i>
14:45-15:05	UNSTEADY FLUX CORRECTION SCHEME FOR SOLVING AERODYNAMIC AND AEROACOUSTICS PROBLEMS ON UNSTRUCTURED MESHES P.A. Bakhvalov , T.K. Kozubskaya <i>Keldysh Institute of Applied Mathematics RAS, Moscow, Russia</i>
15:05-15:25	A DISPERSION IMPROVED CABARET SCHEME FOR LINEAR ACOUSTIC PROPAGATION PROBLEMS S.A. Karabasov and A. Chintagunta <i>Queen Mary University of London, London, UK</i>

15:25-15:45	Coffee-break
15:45-17:05	Session 4 Chairman: Vladimir Titarev , <i>Dorodnicyn Computing Center of FRC CSC RAS / TsAGI, Russia</i>
15:45-16:05	ON A POSTERIORI SUBCELL FINITE VOLUME LIMITERS FOR THE DISCONTINUOUS GALERKIN METHOD AND APPLICATIONS TO NONLINEAR HYPERBOLIC SYSTEMS Michael Dumbser <i>University of Trento, Department of Civil, Environmental and Mechanical Engineering, Trento, Italy</i>
16:05-16:25	PARALLEL IMPLEMENTATION OF DG METHOD HIGH ORDER OF ACCURACY AND SOLUTION OF CLASSICAL TESTING PROBLEMS S.M. Bosnyakov, S.V. Mikhaylov , V.Yu. Podaruev, A.I. Troshin <i>Central Aerohydrodynamic Institute (TsAGI), Zhukovsky, Moscow region, Russia</i>
16:25-16:45	A COMBINED FEM/BEM DISCRETE NUMERICAL METHOD FOR SOLVING EXTERNAL SCATTERING PROBLEMS IN ACOUSTICS J.Poblet-Puig ¹ , A. Shanin ² ¹ <i>Universitat Politècnica de Catalunya, Laboratori de Càlcul Numèric, Barcelona, Spain</i> ² <i>Moscow State University, Department of Physics, Moscow, Russia</i>
16:45-17:05	AZIMUTHAL MODE MEASUREMENTS WITH ARRAY OF MICROPHONES IN LIMITED ANGULAR RANGE I.V. Belyaev ^{1,2} , Yu. V. Bersenev ^{2,3} , R.V. Burdakov ^{2,3} , V.V. Ershov ² , O.Yu. Kustov ² , V.V. Palchikovskiy ² , T.A. Viskova ^{2,3} ¹ <i>Central Aerohydrodynamic Institute (TsAGI), Moscow, Russia</i> ² <i>Perm National Research Polytechnic University, Perm, Russia</i> ³ <i>Aviadvigatel, Perm, Russia</i>
20:00-23:00	Welcome Reception

September 22nd, Thursday	
9:30-10:55	Session 5 Chairman: Ulf Michel , <i>CFD Software E+F GmbH, Berlin, Germany</i>
9:30-10:15 Invited lecture	AIRFRAME NOISE MODELING AND PREDICTION Yueping Guo <i>NEAT Consulting, USA</i>
10:15-10:35	EXPERIMENTAL AERODYNAMIC AND ACOUSTIC DATABASE OF A 2D HIGH LIFT WING WITH AND WITHOUT SWEEP ANGLE Eric Manoha ¹ , Michael Pott-Polenske ² ¹ <i>ONERA, Châtillon, France</i> ² <i>DLR, Braunschweig, Germany</i>
10:35-10:55	NUMERICAL SIMULATIONS OF LEISA2 HIGH-LIFT CONFIGURATION AT ONERA Marc Terracol ¹ , Thomas Le Garrec ¹ , Daniel-Ciprian Mincu ¹ , Eric Manoha ¹ , Damiano Casalino ² , André Ribeiro ² ¹ <i>ONERA, The French Aerospace Lab, Châtillon, France</i> ² <i>Exa GmbH, Stuttgart, Germany</i>
10:55-11:15	Coffee-break
11:15-12:35	Session 6 Chairman: Alexey Kudryavtsev , <i>Khristianovich Institute of Theoretical and Applied Mechanics SB RAS, Novosibirsk, Russia</i>
11:15-11:35	ACOUSTIC FIELD AROUND A TRANSONIC CAVITY FLOW George N. Barakos, Gaëtan J.M. Loupy <i>University of Glasgow, School of Engineering, CFD Laboratory, UK</i>
11:35-11:55	NUMERICAL SIMULATION OF TURBULENT FLOW OVER A CAVITY FOR FUNDAMENTAL AND APPLIED PURPOSES B.N. Dankov ¹ , A.P. Duben ² , T.K. Kozubskaya ² , N.S. Zhdanova ² ¹ <i>Central Research Institute of Machine Building (TSNIIMash), Korolev, Moscow region, Russia</i> ² <i>Keldysh Institute of Applied Mathematics RAS, Moscow, Russia</i>
11:55-12:15	ABNORMAL AMPLIFICATION OF SOUND REFRACTED BY AN OBLIQUE SHOCK WAVE Igor Menshov ¹ , Keiichi Kitamura ² ¹ <i>Keldysh Institute of Applied Mathematics RAS, Moscow, Russia</i> ² <i>Yokohama University, Yokohama, Japan</i>

12:15-12:35	PROPAGATION OF ACOUSTIC WAVES THROUGH MIXING LAYER OF SUBSONIC AND SUPERSONIC FLOWS V.A. Lebiga^{1,2}, D.S. Mironov¹, A.Yu. Pak¹, V.N. Zinoviev¹ ¹ <i>Khristianovich Institute of Theoretical and Applied Mechanics SB RAS, Novosibirsk, Russia</i> ² <i>Novosibirsk State Technical University, Novosibirsk, Russia</i>
12:35-14:00	Lunch
14:00-15:25	Session 7 Chairman: Andrey Shanin, <i>Moscow State University, Moscow, Russia</i>
14:00-14:45 Invited lecture	DUCT MODES IN SHEAR FLOW: PROPERTIES AND APPLICATIONS OF THE PRIDMORE-BROWN EQUATION Sjoerd W. Rienstra <i>Eindhoven University of Technology, Department of Mathematics and Computer Science, the Netherlands</i>
14:45-15:05	SOUND FIELD OF POINT SOURCE IN THE LAYER WITH CONSTANT GRADIENT OF SOUND VELOCITY A.V. Gladilin, M.A. Mironov <i>N.N.Andreyev Acoustics Institute, Moscow, Russia</i>
15:05-15:25	AIR FLOW EXPLORATION USING ACOUSTICAL MLS-SIGNAL A. A. Belous¹, A. I. Korolkov¹, N. N. Ostrikov², A. V. Shanin¹ ¹ <i>Moscow State University, Moscow, Russia</i> ² <i>Central Aerohydrodynamic Institute (TsAGI), Moscow, Russia</i>
15:25-15:45	Coffee-break
15:45-16:45	Session 8 Chairman: Ruslan Mirgazov, <i>Central Aerohydrodynamic Institute (TsAGI), Moscow, Russia</i>
15:45-16:05	CREATING OF EXPERIMENTAL ACOUSTIC DATABASE FOR AN ISOLATED HELICOPTER'S MAIN ROTOR G.N. Barakos¹, A.S. Batrakov², A.N. Bozhenko², L.I. Garipova², A.N. Kusuymov², S.A. Michailov², V.V. Pakhov², R.P. Stepanov². ¹ <i>University of Glasgow, Glasgow, UK</i> ² <i>KNRTU-KAI, Kazan, Russia</i>
16:05-16:25	NUMERICAL SIMULATION OF ROTOR AERODYNAMICS AND ACOUSTICS USING HIGHER-ACCURACY EDGE-BASED ALGORITHMS ON UNSTRUCTURED MESHES I.V. Abalakin¹, V.A. Anikin², P.A. Bakhvalov¹, V.G. Bobkov¹, T.K. Kozubskaya¹ ¹ <i>Keldysh Institute of Applied Mathematics, Moscow, Russia</i> ² <i>Kamov Design Bureau, Moscow Region, Russia</i>
16:25-16:45	THE METHOD OF AERODYNAMIC CHARACTERISTICS COMPUTATION OF THE PROPELLER AND ITS OPTIMIZATION WITH NOISE ESTIMATION WITHIN THE SOFTWARE EWT-TsAGI A.V. Lysenkov <i>Central Aerohydrodynamic Institute (TsAGI), Zhukovsky, Moscow region, Russia</i>
17:00-18:30..	Walking Tour around Svetlogorsk

September 23rd, Friday	
9:30-11:00	Session 9 Chairman: Sergey Karabasov, <i>Queen Mary University of London, London, UK</i>
9:30-10:15 Invited lecture	PECULIARITIES OF COMPUTATIONAL EXPERIMENT VALIDATION IN AEROACOUSTICS Victor Kopiev <i>Central Aerohydrodynamic Institute (TsAGI), Moscow, Russia</i>
10:15-10:35	ABOUT ACCURACY OF EXPERIMENTAL DATA FOR VALIDATION OF NUMERICAL METHODS S.M. Bosnyakov, A.F. Chevagin, A.R. Gorbushin, I.A. Kursakov, S.V. Matyash, S.V. Mikhailov <i>Central Aerohydrodynamic Institute (TsAGI), Zhukovsky, Moscow region, Russia</i>
10:35-10:55	A FAR-FIELD CALIBRATION-FREE LOW-ORDER MODEL FOR JET NOISE PREDICTIONS Vasily A. Semiletov¹, Sergey A. Karabasov² ¹ <i>University of Cambridge, Engineering Department, Whittle laboratory, Cambridge, UK</i> ² <i>Queen Mary University of London, London, UK</i>

10:55-11:15	Coffee-break
11:15-12:35	Session 10 Chairman: Victor Kopiev , <i>Central Aerohydrodynamic Institute (TsAGI), Moscow, Russia</i>
11:15-11:35	LARGE SCALE MOTION IN A DUAL-STREAM JET Felix Kramer, Ulf Michel , Charles Mockett <i>CFD Software E+F GmbH, Berlin, Germany</i>
11:35-11:55	LOCATING NOISE SOURCES OF SUBSONIC JET USING RANS/ILES-METHOD L. Benderskiy , S. Krasheninnikov <i>Central Institute of Aviation Motors (CIAM), Moscow, Russia</i>
11:55-12:15	COMPUTATION OF JET NOISE USING STRUCTURED AND UNSTRUCTURED ALGORITHMS BASED ON ENHANCED DDES FORMULATION ACCELERATING THE RANS-TO-LES TRANSITION IN SHEAR LAYER A.P. Duben ¹ , T.K. Kozubskaya ¹ , M.L. Shur ² , M.Kh. Strelets ² ¹ <i>Keldysh Institute of Applied Mathematics RAS, Moscow, Russia</i> ² <i>SPbPU, Saint-Petersburg, Russia</i>
12:15-12:35	COMPUTATIONAL MODELLING OF DUAL STREAM JET USING CABARET GPU SOLVER: AERODYNAMIC AND AEROACOUSTIC VALIDATION Vasily A. Semiletov ¹ , Anton P. Markesteijn ² , Georgy A. Faranosov ^{3,4} , Sergey A. Karabasov ² , Victor F. Kopiev ^{3,4} ¹ <i>University of Cambridge, Engineering Department, Whittle laboratory, Cambridge, UK</i> ² <i>Queen Mary University of London, London, UK</i> ³ <i>Central Aerohydrodynamic Institute (TsAGI), Moscow, Russia</i> ⁴ <i>Perm National Research Polytechnic University, Perm, Russia</i>
12:35-14:00	Lunch
14:00-15:40	Session 11 Chairman: Sergey Bosnyakov , <i>Central Aerohydrodynamic Institute (TsAGI), Zhukovsky, Russia</i>
14:00-14:45 Keynote presentation	TILDA: TOWARDS INDUSTRIAL LES/DNS IN AERONAUTICS – PAVING THE WAY OF FUTURE ACCURATE CFD Vincent Couaillier ¹ , Charles Hirsch ² , Werner Haase ³ ¹ <i>ONERA, The French Aerospace Lab, Palaiseau</i> ² <i>NUMECA, Brussels, Belgium</i> ³ <i>Aeronautics Consultant, Neubiberg, Germany</i>
14:45-15:05	DIRECT NUMERICAL SIMULATION OF TRANSITION TO TURBULENCE IN SUPERSONIC BOUNDARY LAYERS A.N. Kudryavtsev ^{1,2} , D.V. Khotyanovsky ^{1,2} ¹ <i>Khristianovich Institute of Theoretical and Applied Mechanics SB RAS, Novosibirsk, Russia</i> ² <i>Novosibirsk State University, Novosibirsk, Russia</i>
15:05-15:25	BUILDING A NEW SUBGRID CHARACTERISTIC LENGTH FOR LES Alexey Duben ¹ , Andrey Gorobets ¹ , Xavier Trias ² ¹ <i>Keldysh Institute of Applied Mathematics RAS, Moscow, Russia</i> ² <i>Heat and Mass Transfer Technological Center, Polytechnic University of Catalonia, Terrassa, Spain</i>
15:25-15:40	Group Photo
15:40-16:00	Coffee-break
16:00-17:15	Round-Table Discussions <i>On the state-of-the art of computational experiment in aeroacoustics, directions of further developments and challenges, other scientific and practical questions related to the Workshop and Conference</i> <i>All the participants of International Workshop and Russian Conference are invited</i> <i>Deadline on CEAA2016 Survey submission</i>
19:00-24:00	CEAA2016 Dinner Closing Ceremony of Russian Conference and International Workshop

Notes