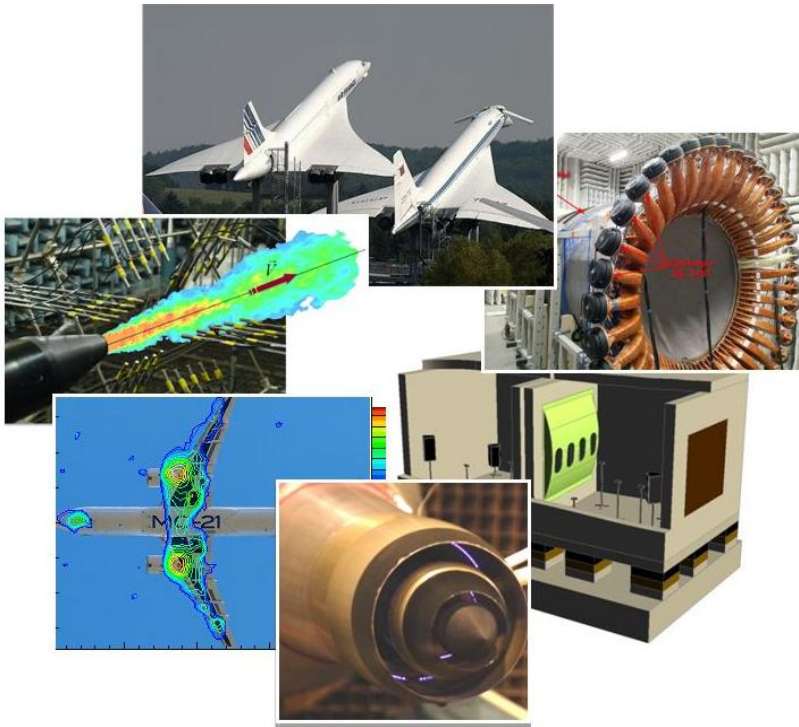




CENTRAL AEROHYDRODYNAMIC INSTITUTE
Named after Prof. N.E. Zhukovsky

**PROGRAM
OF THE 6th OPEN ALL-RUSSIAN
(XVIII SCIENTIFIC AND TECHNICAL)
CONFERENCE ON AEROACOUSTICS**

(September 22 – 27, 2019)



Moscow, 2019

CONFERENCE SCHEDULE

September, 22 Arrival and Accommodation

September, 23

9⁵⁰ – 14⁰⁰ Opening of Conference. Plenary Session (Conference Hall)

15⁰⁰ – 19⁰⁰ Session 1 (Conference Hall)

Session 2 (Room 2)

Session 3 (Room 3)

Session 4 (Room 4)

September, 24

10⁰⁰ – 14⁰⁰ Plenary Papers (Conference Hall)

15⁰⁰ – 17⁰⁰ Session 1 (Conference Hall)

Session 2 (Room 2)

Session 3 (Room 3)

Session 4 (Room 4)

17⁰⁰ – 19⁰⁰ Presentation of Hardware and Software in
aeroacoustic research (Conference Hall)

September, 25

10⁰⁰ – 14⁰⁰ Session 1 (Room 2)

Session 2 (Room 3)

Session 3 (Room 4)

15⁰⁰ – 19⁰⁰ Session 1 (Room 2)

Session 2 (Room 3)

Session 3 (Room 4)

September, 26

10⁰⁰ – 14⁰⁰ Session 1 (Room 2)

Session 2 (Room 3)

Session 3 (Room 4)

15⁰⁰ – 19⁰⁰ Session 1 (Room 2)

Session 2 (Room 3)

19⁰⁰ Conference closing ceremony

September, 27 Departure

CONFERENCE PROGRAM

September, 23. Morning session, 9⁵⁰ — 14⁰⁰, (Conference Hall)

PLENARY SESSION

Co-chairs: *V.F. Kopiev (TsAGI)*
S.Yu. Krashennnikov (CIAM)

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|------------------------------------|--|---|
| 9 ⁵⁰ -10 ⁰⁰ | A.L. Medvedsky (<i>TsAGI</i>),
B.N. Chetverushkin (<i>IAM RAS</i>),
V.F. Kopiev (<i>TsAGI</i>) | Conference Opening |
| 10 ⁰⁰ -10 ⁴⁵ | V.F. Kopiev (<i>TsAGI</i>) | Problems of aeroacoustics, successes and the prospects |
| 10 ⁴⁵ -11 ³⁰ | A. I. Lanshin, A. V. Lukovnikov,
A. S. Polev (<i>CIAM</i>) | Formation of the appearance of the engines of trunk-route passenger aircraft of the 2030s |
| 11 ³⁰ -11 ⁴⁵ | | COFFEE-BREAK |
| 11 ⁴⁵ -12 ³⁰ | O.Yu. Stradomsky,
I.A. Samoylov, I.V. Lesnichiy
(<i>SRI CA</i>) | The development of air transport in Russia |
| 12 ³⁰ -13 ¹⁵ | A.V. Dolotovskiy,
V.I. Shevyakov, D.I. Nikolaev,
M.S. Voytishina
(<i>"Sukhoy Civil Aircraft" JSC</i>) | Supporting the competitiveness of modern domestic aircraft in operation beyond Horizon 2025 taking into account the newly introduced aviation authorities' requirements for noise and import substitution |
| 13 ¹⁵ -14 ⁰⁰ | A.Yu. Nakvasin
(<i>M. M. Gromov FRI</i>) | Preliminary flight tests and assessment of aircraft community noise characteristics in order to prepare for certification in accordance with the requirements of CS-36 standards and ICAO Appendix 16 |

September, 24. Morning session 10⁰⁰ — 14⁰⁰, (Conference Hall)

PLENARY SESSION

Co-chairs: *A.L. Medvedsky (TsAGI)*
I.A. Samoylov (SRI CA)

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|------------------------------------|------------------------------|---|
| 10 ⁰⁰ -10 ⁴⁵ | K.I. Sypalo (<i>TsAGI</i>) | Supersonic transport, its capabilities and development perspectives |
|------------------------------------|------------------------------|---|

- 10⁴⁵-11³⁰ A.A. Inozemtsev, A.A. Aleksentsev, A.A. Syner (*"UEC-Aviadvigatel" JSC*) Acoustic characteristics of propulsion systems
- 11³⁰-11⁴⁵ COFFEE-BREAK
- 11⁴⁵-12³⁰ O.V. Rudenko (*MSU*) Sonic boom and related problems of nonlinear acoustics
- 12³⁰-13¹⁵ D.A. Lubimov (*CIAM*) On the features of numerical modeling of noise induced by turbulent shear flows problems
- 13¹⁵-14⁰⁰ V.G. Shamaev (*MSU*), A.B. Gorshkov (*MSU, SAI MSU*) Information field of Russian-language publications and the role of the Internet

September, 23. Evening session 15⁰⁰ — 18⁴⁰, (Conference Hall)

Session: "Aircraft engines ducts acoustics and sound absorbing structures"

Co-chairs: *A.A. Aleksentsev ("UEC-Aviadvigatel" JSC)*
A.A. Osipov (CIAM)

- 15⁰⁰-15²⁵ V.F. Kopiev, N.N. Ostrikov (*TsAGI*) Development of effective liners for promising aircraft engines requires both new approaches and the clarification of a number of mathematical models
- 15²⁵-15⁵⁰ M.A. Yakovets, M.S. Ipatov, N.N. Ostrikov (*TsAGI*) Experimental validation of the significant dependence of acoustic field wave structure on the velocity profile on "interferometer with flow" setup based on comparative measurements in laboratory conditions and in the conditions of the anechoic AC-2 chamber
- 15⁵⁰-16¹⁵ V.F. Kopiev, N.N. Ostrikov, M.A. Yakovets, I.A. Ionov (*TsAGI*) Analysis of the results of an experimental study of sound radiation directivity from a small-scale model of an air inlet in anechoic AC-2 chamber at different velocities of the coflow and the suction flow
- 16¹⁵-16⁴⁰ M.A. Yakovets, N.N. Ostrikov, M.S. Ipatov, (*TsAGI*) Validation of the exact solution of the problem of impedance transition based on the experimental study on the "interferometer with flow" setup

16⁴⁰-17⁰⁰

17⁰⁰-17²⁵N.N. Ostrikov (*TsAGI*)

COFFEE-BREAK

Asymptotic model to account the influence of flow inhomogeneity on the structure of a sound field in a channel based on the method of secular equations in a singular perturbation theory

17²⁵-17⁵⁰S.L. Denisov, M.A. Yakovets,
N.N. Ostrikov (*TsAGI*)

Development of a 3-D finite element method for extracting the liners impedance at the "interferometer with flow" setup taking into account an arbitrary profile of the flow velocity

17⁵⁰-18¹⁵M.A. Yakovets, S.L. Denisov,
N.N. Ostrikov (*TsAGI*)

Study of the sound structure of the sound field in the external duct of an aircraft engine in the presence of a pylon

18¹⁵-18⁴⁰V.G.Aleksandrov, A.A. Osipov
(*CIAM*)

Computational study of the possibilities of reactive effects on the propagation of sound in aerodynamic ducts

September, 23. Evening Session: 15⁰⁰ — 18⁴⁰, (Room # 4)

**Session: "Aircraft, helicopters, and UAVs community noise",
Sub-Session: "Helicopter propellers"**

Co-chairs:

***M.Yu. Zaytsev (TsAGI)*
*R.M. Mirgazov (TsAGI)***

15⁰⁰-15²⁵V.I. Vorontsov, M.Yu. Zaytsev,
S.A. Karabasov (*TsAGI*)

Study of the first harmonic directivity of helicopter rotor tonal noise for flight and hovering modes

15²⁵-15⁵⁰S.L. Denisov, M.Yu. Zaytsev
(*TsAGI*)

Study of helicopter rotors large-scale models noise based on the comparative measurements results

15⁵⁰-16¹⁵B.S. Kritskiy, R.M. Mirgazov
(*TsAGI*)

Assessment of the influence of the relative position of the blades on the aerodynamic and acoustic characteristics of the helicopter coaxial rotor

16¹⁵-16⁴⁰ V.V. Pakhov, S.A. Mikhailov Analysis of rotor acoustic characteristics
(*KNRTU-KAI*) in different operating modes

16⁴⁰-17⁰⁰ COFFEE-BREAK

Sub-Session: "Supersonic aircraft community noise"

Co-chairs: *V.F. Kopiev (TsAGI)*
 V.E. Makarov (CIAM)

17⁰⁰-17²⁵ I.V. Belyaev, V.F. Kopiev, Feasibility to meet the community noise
 V.F. Samokhin, G.A. Faranosov, standards for perspective SCA based on
 B.S. Zamfort, (*TsAGI*) evaluation of SCA acceptable jet velocity

17²⁵-17⁵⁰ B.S. Zamfort (*TsAGI*) SCA engine of the next generation

17⁵⁰-18¹⁵ A.A. Mirzoyan, Yu.D. Khaletsky Approach to reduce the SCA engine
(*CIAM*) noise due to low-noise control of power
 plant at take-off

18¹⁵-18⁴⁰ L.A. Bendersky, D.A. Lubimov, Application of the RANS/ILES method
 D.L. Mamyshev, to study the flow and the noise of the jet
 N.A. Pol'nyakov (*CIAM*) issuing from the nozzle of supersonic
 business aircraft

September, 23. Evening session, 15⁰⁰ — 18⁴⁰, (Room # 3)

Session: "Aircraft and helicopter cabin noise"

Co-chairs: *A.Yu. Golubev (TsAGI)*
 V.S. Baklanov ("Tupolev" PJSC)

15⁰⁰-15²⁵ A.Ya. Zverev (*TsAGI*) "Tamed" echo: To the 30th anniversary of
 the AC-11 acoustic test rig creation

15²⁵-15⁵⁰ V.N. Lavrov, P.A. Moshkov, Research and reduction of the noise in
 V.P. Popov, V.V. Rubanovsky, RRJ-95 cockpit
 ("SCA" JSC)

15⁵⁰-16¹⁵ A.Ya. Zverev (*TsAGI*), Experimental evaluation of MC-21 full-
 T.O. Lesnykh, G.V. Pararin scaled panels sound damping
 ("*Irkut Corporation*" PJSC)

16¹⁵-16⁴⁰ Huang Wenchao, Pan Kai, Hou Discussion about acceptable levels of air-
 Feng (CAE) craft cabin noise and its control technology

16⁴⁰-17⁰⁰ COFFEE-BREAK

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| 17 ⁰⁰ -17 ²⁵ | L.A. Lazarev (<i>TsAGI</i>) | Development of algorithms for calculating the optimal arrangement of resonators for the onboard structure of a propeller aircraft |
| 17 ²⁵ -17 ⁵⁰ | A.Yu. Golubev, S.V.Kuznetsov, G.A. Potokin (<i>TsAGI</i>) | Spatial-temporal structure of pressure fluctuations on inclined ledge surface |
| 17 ⁵⁰ -18 ¹⁵ | E.Yu. Arhireeva, B.N. Dan'kov, A.P. Kosenko (<i>TsNIMASH</i>), S.P. Rybak
(<i>"RSC "Energia" PJSC</i>) | Experience of comparison of model and full-scale data by pressure fluctuations on over-caliber nose parts |
| 18 ¹⁵ -18 ⁴⁰ | V.V. Kotov (<i>ESI Group</i>) | Application of energy and hybrid calculations method to reduce the acoustic and solid-borne noises of structures |

September, 23. Evening session 15⁰⁰ — 16⁴⁰, (Room # 2)

Session: "Aircraft, helicopters, and UAVs community noise"

Sub-Session: "Jet noise"

**Co-chairs: G.A. Faranosov (*TsAGI*)
 S.Yu. Krasheninnikov (*CIAM*)**

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|------------------------------------|--|---|
| 15 ⁰⁰ -15 ²⁵ | V.A. Shorstov, V.E.Makarov
(<i>CIAM</i>) | Computational study of the features of the jets outflow from rectangular nozzles and the noise generated by them in the far field |
| 15 ²⁵ -15 ⁵⁰ | A.A. Aleksentsev
(<i>"UEC-Aviadvigatel" JSC</i>),
S.Yu. Krasheninnikov,
A.K. Mironov (<i>CIAM</i>),
Yu.V. Bersenev (<i>PSTU</i>) | Chevron nozzles efficiency estimation for the aircraft engine noise reduction |
| 15 ⁵⁰ -16 ¹⁵ | M.A. Safronova, A.D Shiryayev,
V.I. Korenbaum,
(<i>POI FEB RAS</i>) | Study of whistling sounds harmonics in the noise of human forced expiration |
| 16 ⁴⁰ -17 ⁰⁰ | COFFEE-BREAK | |

September, 23. Evening Session 17⁰⁰ — 18⁴⁰, (Room # 2)

Session: "Innovative methods of noise control"

Co-chairs: *V.A. Kopiev, (TsAGI)*
G.A. Faranosov (TsAGI)

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| 17 ⁰⁰ -17 ²⁵ | O.P.Bychkov, V.A. Kopiev,
V.F. Kopiev, G.A. Faranosov
(<i>TsAGI</i>),
P.N.Kazansky, I.A.Moralev
(<i>JIHT RAS</i>) | Development and implementation of a system for actively suppressing instability waves in an unexcited turbulent jet |
| 17 ²⁵ -17 ⁵⁰ | O.P.Bychkov, V.A. Kopiev,
V.F. Kopiev, G.A. Faranosov
(<i>TsAGI</i>),
P.N.Kazansky, I.A.Moralev
(<i>JIHT RAS</i>) | Testing the concept of active control of the jet-wing interaction noise using plasma actuators |
| 17 ⁵⁰ -18 ¹⁵ | I.A. Abzalilov, O.P.Bychkov,
G.A. Faranosov (<i>TsAGI</i>) | POD method implementation to analyze the near and far fields of turbulent jet |
| 18 ¹⁵ -18 ⁴⁰ | O.P.Bychkov, V.F. Kopiev,
G.A. Faranosov (<i>TsAGI</i>) | Validation of low-frequency jet-wing interaction noise model in the presence of coflow |

September, 24. Evening Session 15⁰⁰ — 16⁴⁰, (Room # 3)

Session: "Aviation ecology"

Co-chairs: *A.A. Mirzoyan (CIAM)*
A.V. Shustov (TsAGI)

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|------------------------------------|--|---|
| 15 ⁰⁰ -15 ²⁵ | V.S. Baklanov (<i>"Tupolev" PJSC</i>) | Aviation ecology of aircraft with new generation engines (achievements and challenges) |
| 15 ²⁵ -15 ⁵⁰ | M.S. Bespalov, E.Yu. Oseledets,
(<i>"Ecological Initiatives Center"</i>
<i>PB LLC</i>) | Features of noise regulation in the area of airports |
| 15 ⁵⁰ -16 ¹⁵ | A.A. Kasatkin (<i>MIPT</i>),
A.V. Shustov (<i>TsAGI</i>) | Development of approaches to assess the impact of technical excellence of civilian aircraft and technical solutions on the area with an increased noise level in the airport area |

16¹⁵-16⁴⁰A.N. Stepanenko, A.Yu. Nakvasin, Development of flight research methods
V.V.Ivakin, R.R. Arslanova, to determine the characteristics of per-
R.R. Yunisov, (*FRI n .a. Gromov*) spective SCA sonic boom

16⁴⁰-17⁰⁰ COFFEE-BREAK

September, 24. Evening Session 15⁰⁰ — 16⁴⁰, (Conference Hall)

Session: "Aircraft, helicopters, and UAVs community noise"

Sub-Session: "Noise sources localization"

Co-chairs: *A.K. Mironov (CIAM)*
G.A. Faranosov (TsAGI)

15⁰⁰-15²⁵V.F. Kopiev, M.Yu. Zaytsev, Localization and ranking of noise
S.A. Velichko, V.A. Matveev sources of modern civil aircraft in full-
(*TsAGI*) scale flight experiment

15²⁵-15⁵⁰O.P.Bychkov, G.A. Faranosov, On interrelation of the modal structures
I.V. Belyaev (*TsAGI*) of isolated jet near field and the jet-wing
system far field

15⁵⁰-16¹⁵S.N. Panov Acoustic localization of noise sources
(*"OKTAVA+ Company" LLC*) by microphone antennas

16¹⁵-16⁴⁰Zhang Jun, Wang Xunnian, A study of the localization and
Chen Zhengwu, Zhang Junlong quantification of noise sources using an
(*CARDC*) inflow-speaker calibration

16⁴⁰-17⁰⁰ COFFEE-BREAK

September, 24. Evening Session 15⁰⁰ — 16⁴⁰, (Room # 2)

Session: "Aircraft, helicopters, and UAVs community noise"

Sub-Session: "Shielding"

Co-chairs: *N.N. Ostrikov (TsAGI)*
S.L. Denisov (TsAGI)

15⁰⁰-15²⁵S.L. Denisov, M.S. Ipatov, Studies of noise shielding of rotating az-
N.N. Ostrikov, M.A. Yakovets imuthal modes emitted from an open cy-
(*TsAGI*) lindrical duct inlet

15²⁵-15⁵⁰V.F. Kopiev, S.A. Chernyshev, Investigation of turbulent jet noise
G.A. Faranosov, N.N. Ostrikov, shielding based on the adapted correla-
S.L. Denisov (*TsAGI*) tion theory

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| 15 ⁵⁰ -16 ¹⁵ V.G. Dmitriev, V.F. Samokhin,
N.P.Maslova (<i>TsAGI</i>) | Method and results of assessment of engine layout effect on subsonic aircraft community noise levels |
| 16 ¹⁵ -16 ⁴⁰ V.B. Kurilov, A.I. Sakharova,
S.I. Skomorokhov (<i>TsAGI</i>) | On the influence of the position of marching engines on aerodynamic characteristics and flow parameters near the trunk-route aircraft at the initial stage of take-off |

September, 24. Evening Session 15⁰⁰ — 16⁴⁰, (Room # 4)

Session: "Methods of acoustic measurements"

Co-chairs: *S.Yu. Makashov (TsAGI)*
A.Yu. Golubev (TsAGI)

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| 15 ⁰⁰ -15 ²⁵ Yu.V. Kurylenko
(<i>"Digital Devices" LLC</i>) | Challenges of regulatory and methodological provision of aircraft community noise measurements |
| 15 ²⁵ -15 ⁵⁰ A.N. Vishnyakov
(<i>"Eco-Physics" LLC</i>) | Integration problems of portable measuring systems for noise and vibration control in aircraft cabin |
| 15 ⁵⁰ -16 ¹⁵ A.N. Vishnyakov
(<i>"Eco-Physics" LLC</i>),
S.Yu. Makashov (<i>TsAGI</i>) | Application of echoed sweep-signal method to assess the AC-2 chamber acoustic characteristics |
| 16 ¹⁵ -16 ⁴⁰ O.P. Bychkov, S.A. Velichko
(<i>TsAGI</i>) | Localization of a low-frequency noise source for a turbulent jet in the case of benchmark test |

16⁴⁰-17⁰⁰ COFFEE-BREAK

September, 24. Evening Session 17⁰⁰ — 19⁰⁰, (Conference Hall)

Session: "Presentation of modern hardware and software in aeroacoustic researches"

Co-chairs: *M.Yu. Zaytsev (TsAGI)*
S.Yu. Makashov. (TsAGI)

September, 25. Morning session 10⁰⁰ — 13⁴⁰, (Room # 4)

Session: "Aircraft engines ducts acoustics and sound absorbing structures"

Co-chairs: N.N. Ostrikov (*TsAGI*),
Yu.D. Khaletsky (*CIAM*)

- 10⁰⁰-10²⁵ A.A. Aleksentsev, R.V. Burdakov, Challenges of the new types of liners de-
E.V. Stepina, A.A. Syner veloping
(*"UEC-Aviadvigatel" JSC*)
- 10²⁵-10⁵⁰ V.V. Palchikovskiy, Creation and testing of a 40-channel
Y.V. Bersenev, I.A. Korin, generator of rotating sound modes for
R.V. Burdakov (*PSTU*) conducting research on the noise propa-
gation in a full-scale model of the an
aircraft engine air intake
- 10⁵⁰-11¹⁵ I.A. Korin, V.V. Palchikovskiy, Determination of the impedance of a
V.V. Pavlogradsky, Yu.V. Bersenev. large-sized liners during the generation
(*PSTU*) of a given noise azimuthal modal com-
position propagating in the duct of a
model of a full-scale aircraft engine air
intake
- 11¹⁵-11⁴⁰ V.F. Kopiev, N.N. Ostrikov, Investigation of the effect of the number
M.A. Yakovets (*TsAGI*), of longitudinal seams in the design of
V.V. Palchikovskiy, A.I. Korin, the liners on the structure of the sound
Yu.V. Bersenev (*PSTU*) field in the duct of a large-scale model
of the air intake installed in the anechoic
chamber of PSTU
- 11⁴⁰-12⁰⁰ COFFEE-BREAK
- 12⁰⁰-12²⁵ Ya.S. Pochkin, Yu.D. Khaletsky The influence of the combined silencer
(*CIAM*) reactive element design parameters on
acoustic efficiency
- 12²⁵-12⁵⁰ E.M. Shuldeshov, I.D. Kraev, Sound-absorbing material-structure to re-
A.P. Petrova (*VIAM*) duce the community noise of aircraft en-
gines
- 12⁵⁰-13¹⁵ M.S. Ipatov, M.A. Yakovets, Research of cellular liners with blown
N.N. Ostrikov, M.P. Lavrukhnina, inserts on the "interferometer with flow"
I.A. Ionov (*TsAGI*), setup
E.M. Shuldeshov (*VIAM*)
- 13¹⁵-13⁴⁰ A.I. Komkin, A.I. Bykov Measuring the nonlinear acoustic char-
(*BMSTU*) acteristics of perforations

September, 25. Morning session, 10⁰⁰ — 13⁴⁰, (Room # 3)

Session: "Acoustic strength and vibroacoustics"

Co-chairs: A.L. Medvedsky (*TsAGI*)
A.Ya. Zverev (*TsAGI*)

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| 10 ⁰⁰ -10 ²⁵ S.L. Denisov, A.L. Medvedsky
(<i>TsAGI</i>) | Investigation of acoustic radiation effect of large-scale coherent structures on the response and the durability of flat polygon plates |
| 10 ²⁵ -10 ⁵⁰ S. V. Dubinsky,
F. S. Sevastyanov,
A.Yu. Golubev, S.L. Denisov,
V.M. Kostenko, I.A. Zharenov
(<i>TsAGI</i>) | Investigation of strength and durability characteristics of composite aircraft structures at vibration-acoustic loading |
| 10 ⁵⁰ -11 ¹⁵ A.Ya. Zverev (<i>TsAGI</i>) | Multi-wall composite panel vibroacoustics |
| 11 ¹⁵ -11 ⁴⁰ A.L. Medvedsky (<i>TsAGI</i>)
M.I. Martirosov (<i>MAI</i>),
A.V. Khomchenko
(<i>Irkut Corporation</i>) PJSC | Numerical study of composite reinforced panels dynamics with interlayer defects of technological nature under unsteady loads |
| 11 ⁴⁰ -12 ⁰⁰ | COFFEE-BREAK |
| 12 ⁰⁰ -12 ²⁵ A.Yu. Golubev, G.A. Potokin
(<i>TsAGI</i>), D.V. Barysheva
(<i>Irkut Corporation</i>) PJSC | Determination of acoustic loads on MC-21 lift devices during ground runs |
| 12 ²⁵ -12 ⁵⁰ R.G. Abdrashitov, O.Yu. Popov
(<i>Sukhoi</i>) EDB) | Method to determine the time of the airborne equipment accelerated vibration-proof test |
| 12 ⁵⁰ -13 ¹⁵ E.A. Ivanushkin, A.V. Sharunov
(<i>Sukhoi</i>) EDB) | Processing of pulse and vibration-impact processes occurring on aircraft structural elements |
| 13 ¹⁵ -13 ⁴⁰ I.S. Sidorov, Yu.A. Svirsky,
S.V. Dubinskiy, V.M. Kostenko
(<i>TsAGI</i>) | Methods to calculate the fatigue damage of aircraft structures at different spectra of vibration-acoustic loads |

September, 25. Morning session, 10⁰⁰ — 13⁴⁰, (Room # 2)

Session: "Turbulence structure and noise sources"

Co-chairs:

A.K. Mironov (CIAM)

S.A. Chernyshev (TsAGI)

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| 10 ⁰⁰ -10 ²⁵ V.F. Kopiev,
S.A. Chernyshev (<i>TsAGI</i>) | The model of small-scale sound sources in a turbulent subsonic jet |
| 10 ²⁵ -10 ⁵⁰ V.F. Kopiev, S.A. Chernyshev
(<i>TsAGI</i>) | Application of Lagrange mechanics to describe the dynamics of compressible perfect gas disturbances |
| 10 ⁵⁰ -11 ¹⁵ V.F. Kopiev, S.A. Chernyshev,
M.A. Yudin (<i>TsAGI</i>) | Research of viscosity effect on the cylinder stability in the circulatory bounded flow |
| 11 ¹⁵ -11 ⁴⁰ V.F. Kopiev, S.A. Chernyshev,
R.V. Akinshin (<i>TsAGI</i>) | On the occurrence of instability during the merger of the oscillations of a vortex ring eigen frequencies |
| 11 ⁴⁰ -12 ⁰⁰ | COFFEE-BREAK |
| 12 ⁰⁰ -12 ²⁵ A.V. Kopiev, K.P. Zybin
(<i>LPI RAS</i>) | Mixed correlators of velocity and velocity gradients in isotropic turbulence |
| 12 ²⁵ -12 ⁵⁰ A.S. Ilin, V.A. Sirota, K.P. Zybin
(<i>LPI RAS</i>) | On temperature fluctuations in an isotropic turbulent flow |
| 12 ⁵⁰ -13 ¹⁵ S.Yu. Krasheninnikov,
P.A. Semenyov (<i>CIAM</i>) | Comparison of possible noise generation mechanisms in turbulent jets |
| 13 ¹⁵ -13 ⁴⁰ V. Gryazev, A.P. Markesteijn,
S.A. Karabasov
(<i>School of Engineering and Material Science, Queen Mary University of London, Mile End Road, London, UK</i>) | Low-Order Models of Dual-Stream Jet Noise with Temperature Effects Based on the Goldstein Generalised Acoustic Analogy |

September, 25. Evening Session 15⁰⁰ — 18⁴⁰, (Room # 4)

Session: "Aircraft engines acoustics"

Co-chairs:

B.S. Zamtfort (*TsAGI*)

A.A. Syner ("*UEC-Aviadvigatel*" JSC)

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| 15 ⁰⁰ -15 ²⁵ V.G. Dmitriev,
V.F. Samokhin, Yu.D. Khaletsky
(<i>CIAM</i>) | Evolution of jet aircraft power plants noise levels |
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- 15²⁵-15⁵⁰ N.A. Gorodkova, Y.V. Bersenev, A.A. Syner, M.P., Startseva, R.V. Burdakov, T.A. Viskova (*"UEC-Aviadvigatel" JSC*) Experimental study of the aviation engine fan noise modal structure
- 15⁵⁰-16¹⁵ B.S. Zamfort (TsAGI) Calculation of main components of fan noise and their contribution to airplane community noise
- 16¹⁵-16⁴⁰ A.A. Rossihin, M.M. Mukhamedzyanova, S.V. Pankov, V.I. Mileschin (*CIAM*) Use of harmonic techniques to calculate fan and compressor tone noise
- 16⁴⁰-17⁰⁰ COFFEE-BREAK
- 17⁰⁰-17²⁵ V.G. Belov, V.V. Degtyarev, A.A. Syner (*"UEC-Aviadvigatel" JSC*) Calculation of fan stage noise at the take-off mode at shock waves presence
- 17²⁵-17⁵⁰ R.Z. Nigmatullin, L.V. Terentyeva (*CIAM*) Calculation research of influence of the exhaust channel with racks on characteristics of tone noise generated by LPT
- 17⁵⁰-18¹⁵ E.A. Sukhovaya (*KNRTU-KAI*) Development of low-power ICE exhaust system with improved characteristics
- 18¹⁵-18⁴⁰ S.F. Timushev D.V. Klimenko (*MAI*), V.N. Gavriluk, A.A. Aksenov (*"Tesis" LLC*), A.A. Dyad'kin, S.P. Rybak (*"RSC "Energia" PJSC*) Calculation of the transient flow in the centrifugal fan and the propagation of tonal noise into environment using the Howe model

September, 25. Evening Session 15⁰⁰ — 18⁴⁰, (Room #3)

Session: "Computational aeroacoustics"

Co-chairs:

T.K. Kozubskaya (IAM RAS)
S.Yu. Krasheninnikov (CIAM)

- 15⁰⁰-15²⁵ I.V. Abalakin, P.A. Bakhvalov, V.G. Bobkov, A.V. Gorobets, T.K. Kozubskaya (*IAM RAS*) On the validation of the NOISEtte software package as applied to the calculation of acoustic fields, radiated by helicopter-propeller
- 15²⁵-15⁵⁰ V.A. Vershkov, B.S. Kritsky, R.M. Mirgazov (*TsAGI*), I.V. Abalakin, V.G. Bobkov, T.K. Kozubskaya (*IAM RAS*) Numerical studies of aeroacoustic characteristics of helicopter model rotor in horizontal flight mode

- 15⁵⁰-16¹⁵V.A. Titarev
(*TsAGI, FRC I&M RAS*) Overview of "Gerbera" aeroacoustic code capabilities
- 16¹⁵-16⁴⁰A.S. Zhigalkin, D.A. Lyubimov
(*CIAM*) Comparison of acoustic characteristics of different methods of synthetic turbulence generation using the simulation of developed turbulent flow in flat channel by RANS/ILES method
- 16⁴⁰-17⁰⁰ COFFEE-BREAK
- 17⁰⁰-17²⁵D.A. Lyubimov, A.A. Postnikov,
M.E. Pikalov, A.A. Terekhova
(*CIAM*) RANS/ILES analysis by spectral properties method and pressure fluctuations level in subsonic open air intake in arrangement with aircraft fuselage
- 17²⁵-17⁵⁰R.Sh.Ayupov, L.A. Bendersky,
D.A. Lyubimov (*CIAM*) RANS/ILES research of flow and noise of the jet out-flow from the COJEN dual-stream model nozzle
- 17⁵⁰-18¹⁵D.A. Lyubimov, A.O. Chestnykh
(*CIAM*) RANS/ILES analysis by influence of angle-of-attack and throttling on level and spectral properties of pressure fluctuations in high-speed air intake
- 18¹⁵-18⁴⁰Yimin Wang (*CARDC*) Numerical simulation of sound wave propagation in typical flow field

September, 25. Evening Session 15⁰⁰ — 18⁴⁰, (Room # 2)

Session: "Turbulence structure and noise sources"

Co-chairs:

K.P. Zybin (LPI RAS)

V.I. Korenbaum (POI FEB RAS)

- 15⁰⁰-15²⁵V.F. Kopiev (*TsAGI*),
I.V. Hramtsov (*PSTU*) Computation and experimental studies of aeroacoustic characteristics of vortex rings of different diameters
- 15²⁵-15⁵⁰Xingqiang Liu, Wenchao Huang,
Hao Yan, Hongli Li (*CAE*) Tandem cylinder noise characteristics research and advance noise reduction method exploration
- 15⁵⁰-16¹⁵V.F. Kopiev S.A. Chernyshev,
M.A. Yudin (*TsAGI*) Investigation of the vorticity intensification process in the flow with shear instability

- 16¹⁵-16⁴⁰S.Yu. Fedoseyev, S.F. Timushev
(MAI) Description of acoustic fluctuations generation by vortex structures using point symmetry groups
- 16⁴⁰-17⁰⁰ COFFEE-BREAK
- 17⁰⁰-17²⁵A.V. Trilis, S.V. Sukhinin, V.S. Yurkovsky (CIAM) Instability of the spherical combustion front as a source of sound with discrete modes
- 17²⁵-17⁵⁰A.P. Konstantinov, S.V. Sukhinin (LIH SB RAS) Thermo-acoustic vibrations in Rijke channels grid of cellular and revolving type
- 17⁵⁰-18¹⁵V.I. Korenbaum, A.E. Kostiv, S.V. Gorovoy, V.M. Dorozhko (POI FEB RAS) Underwater noises of light divers conditioned by aero- and hydrodynamic effects
- 18¹⁵-18⁴⁰Yi Chao Wang, Qiang Peng, Qian Wen min Wang PhD (CARDC) Characterisation of three dimensional cavity noise in moderate Reynold number

September, 26. Morning session 10⁰⁰ — 13⁴⁰, (Room # 4)

Session: "Aircraft engines ducts acoustics and sound absorbing structures"

Co-chairs:

N.N. Ostrikov. (TsAGI)

A.I. Komkin (BMSTU)

- 10⁰⁰-10²⁵P.V. Pisarev, A.N. Anoshkin, K.A. Maksimova (PSTU) Numerical prediction of the acoustic efficiency of Helmholtz prismatic resonators of different configurations
- 10²⁵-10⁵⁰P.V. Pisarev, A.N. Anoshkin, K.A. Maksimova, I.V. Khramtsov (PSTU) Investigation of the influence of cellular liners perforation parameters on their acoustic efficiency
- 10⁵⁰-11¹⁵I.A. Ionov, M.S. Ipatov, N.N. Ostrikov (TsAGI) On improving the accuracy of measuring liners impedance by the normal incidence interferometer due to increase in the number of microphones
- 11¹⁵-11⁴⁰M.S. Ipatov, M.A. Yakovets (TsAGI) The investigation of the new type of liners with reduced adjustment frequency implementing the normal incidence interferometer
- 11⁴⁰-12⁰⁰ COFFEE-BREAK

- 12⁰⁰-12²⁵I.V. Khramtsov, O.Yu. Kustov,
V.V. Palchikovskiy,
R.V. Bulbovich (*PSTU*) Determination of the acoustic characteristics of liners samples based on numerical modeling in 3-D formulation
- 12²⁵-12⁵⁰V. I. Maksimenkov, M.V. Molod,
V.I. Fedoseyev (*VSTU*) Features of sound-absorbing structures with corrugated filler
- 12⁵⁰-13¹⁵M.S. Ipatov, M.A. Yakovets,
N.N. Ostrikov (*TsAGI*) Research of non-locally reacting corrugated liners with different degree of perforation at the "interferometer with flow" setup
- 13¹⁵-13⁴⁰R.N. Kolegov, V.K. Mekhonoshin,
A.A. Syner, N.V. Shuvaev (*PSTU*) Development of an acoustic model of the flow part of a gas turbine engine

September, 26. Morning session 10⁰⁰ — 13¹⁵, (Room # 3)

Session: "Aircraft and helicopter cabin noise"

Co-chairs: *A.Ya. Zverev (TsAGI)*
R.G. Abdrashitov ("Sukhoi" EDB)

- 10⁰⁰-10²⁵P.A. Popov (*SSAU*) Investigation of nonlinear behavior of skin elements sound insulation
- 10²⁵-10⁵⁰A.V. Kuznetsov, P.A. Popov,
A.I.Safin, A.A.Igolkin (*SSAU*) Experimental investigation of polyurethane foam acoustic characteristics
- 10⁵⁰-11¹⁵K.I. Zaytsev, A.L. Polovnev,
S.D. Pushkin
(*"RSC "Energia" PJSC*) Computational and experimental investigations of multilayer sound-absorbing materials properties
- 11¹⁵-11⁴⁰A.N. Kotov, A.Yu. Golubev
(*TsAGI*), S.P. Rybak
(*"RSC "Energia" PJSC*) Investigation of noise sources of the spacecraft command compartment and development of measures to reduce their acoustic radiation
- 11⁴⁰-12⁰⁰ **COFFEE-BREAK**
- 12⁰⁰-12²⁵V.G. Karadzhi (*"Air G" LLC*),
S.P. Rybak (*"Energia" RSC PJSC*) Determination of aerodynamic and acoustic characteristics of the most intense noise sources in the spacecraft command compartment

- 12²⁵-12⁵⁰ P.A. Popov, A.V. Kuznetsov (SSAU) Computational and experimental estimation of sound insulation of the assembly and protective unit for the space module
- 12⁵⁰-13¹⁵ T.V. Zharnikov (*TsAGI*) Capabilities of standard FE packages to calculate the vibration and acoustic properties of aircraft cabin

September, 26. Morning session, 10⁰⁰ — 11⁴⁰, (аудитория №4)

Session: "Innovative methods of noise control"

Co-chairs:

V.A. Kopiev (TSAGI)

I.A. Moralev (JIHT RAS)

- 10⁰⁰-10²⁵ V.F. Kopiev, V.A. Kopiev (*TSAGI*), P.N. Kazansky, I.A. Moralev (*JIHT RAS*) Study of HF DBD plasma actuator efficiency in the problem of cylinder under critical flow mode noise reduction
- 10²⁵-10⁵⁰ A.A. Pudovkin, G.N. Kuznetsov, S.I. Kutakov, A.A. Sukhartsov (*GPI RAS*), A.B. Mayzel, D.I. Keshkov, M. Yu. Kitanov (*"Rubin" Central design bureau of marine engineering*), D.A. Smagin (*"Akin" JSC*) Active damping of intensive periodic signals in the air duct
- 10⁵⁰-11¹⁵ D.A. Gubanov, N.P. Kiselev, S.G. Kundasev, L.P. Trubitsyna (*ITAM SB RAS*) Characteristics of a supersonic jet under the influence of injection of small jets of different configurations
- 11¹⁵-11⁴⁰ Wang Xiansheng, Wu Junqiang, Lu Bo, Yang Dangguo, Zhou Fangqi (*CAE*) Active control of acoustic resonance in a subsonic cavity flow
- 11⁴⁰-12⁰⁰ COFFEE-BREAK

September, 26. Morning session, 12⁰⁰ — 13⁴⁰, (Room # 2)

Session: "Aircraft, helicopters, and UAVs community noise"

Sub-Session: "Jet noise"

Co-chairs:

G.A. Faranosov (TsAGI)
S.Yu. Krasheninnikov (CIAM)

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| 12 ⁰⁰ -12 ²⁵ V.G. Pimstein (<i>TsAGI</i>) | A number of shadow photographs of turbulent jets at aeroacoustic interactions |
| 12 ²⁵ -12 ⁵⁰ I.V. Khramtsov, E.S.Cherenkova, V.V. Ershov, O.Yu. Kustov (<i>PSTU</i>) | On the directivity of jet noise radiation obtained by different measurement methods |
| 12 ⁵⁰ -13 ¹⁵ V.V. Ershov, V.V. Palchikovskiy (<i>PSTU</i>) | Beam antenna with possibility of fast tuning according to number of channels and coordinates of microphones |
| 13 ¹⁵ -13 ⁴⁰ S.A. Glazkov, A.R. Gorbushin, A.V. Semenov, E.P. Stolyarov (<i>TsAGI</i>) | Background pulsations of static pressure in the perforated and slotted working parts of the transonic T-128 wind tunnel |

September, 26. Evening Session, 15⁰⁰ — 18¹⁵ (Room # 4)

Session: "Aircraft, helicopters, and UAVs community noise"

Sub-Session: "Airframe noise"

Co-chairs:

I.V. Belyaev (TsAGI)
M.Yu. Zaytsev (TsAGI)

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| 15 ⁰⁰ -15 ²⁵ V.G. Dmitriyev, V.F. Samokhin (<i>TsAGI</i>) | Evaluation of the wing tips effect on community noise levels of aircraft |
| 15 ²⁵ -15 ⁵⁰ E.V. Sorokin, R.V. Bulbovich, V.V. Ershov (<i>PSTU</i>) | Investigation of model jet and flaps of different configuration interaction noise |
| 15 ⁵⁰ -16 ¹⁵ B.S. Zamfort (<i>TsAGI</i>) | Use of main directions in aircraft noise reduction when creating the domestic WB LRA |
| 16 ¹⁵ -16 ⁴⁰ Chen Bao, Bao Anyu, Zhou Guocheng (<i>CAE</i>) | Wind tunnel test technologies investigation of civil transport airframe/jet noise installation |
| 16 ⁴⁰ -17 ⁰⁰ | COFFEE-BREAK |

Sub-Session "Community noise estimation"

Co-chairs: *I.V. Belyaev (TSAGI)*
V.F. Samokhin (TSAGI)

- 17⁰⁰-17²⁵ Xiaodong Li, Baohong Bai (*CAE*) Influence of Low Noise Design of Large Commercial Aircraft Airframe on Certification Noise
- 17²⁵-17⁵⁰ D.N. Nikolayev ("*SCA*" *JSC*),
Yu. D. Haletsky (*CIAM*) Calculated estimation of regional aircraft noise reduction by modification of power plant noise suppression system
- 17⁵⁰-18¹⁵ B.S. Zamfort (*TsAGI*) Integral comparison of calculated and measured acoustic characteristics of A321NEO with TFE and HBTFE

September, 26. Evening Session. 15⁰⁰ — 18⁴⁰ (Room # 3)

Session: "Computational aeroacoustics"

Co-chairs: *D.A. Lyubimov (CIAM)*
A. V. Gorobets (IAM RAS)

- 15⁰⁰-15²⁵ I.S. Bosnyakov, A.V. Volkov,
G.G. Sudakov (*TsAGI*) Calculation of the vortex flow by the high-order discontinuous Galerkin method
- 15²⁵-15⁵⁰ A.V. Gorobets, A.P. Duben,
T.K. Kozubskaya, P.V. Rodionov,
V.O. Tsvetkova (*IAM RAS*) Simulation of aircraft high lift wing devices noise
- 15⁵⁰-16¹⁵ A.P. Duben, V. Kozubskaya,
P.V. Rodionov (*IAM RAS*),
I.L. Sofronov (*IAM RAS, MIPT*),
G.M. Plaksin (*IAM RAS, MSU*) Beamforming problem in a computational experiment: statement and verification
- 16¹⁵-16⁴⁰ I.A. Savelyev (*MSU*),
A.D. Savelyev (*FRC I&M RAS*) Numerical simulation of high-speed gas flow above plate with cavity at its leading edge
- 16⁴⁰-17⁰⁰ COFFEE-BREAK

- 17⁰⁰-17²⁵ V.A. Shorstov, Yu.P. Fedorchenko, V.E. Makarov (*CIAM*) Hybrid grids application in aerodynamic and acoustic characteristics of power plant elements calculation
- 17²⁵-17⁵⁰ I.V. Abalakin, N.S. Zhdanova, T.K. Kozubskaya (*IAM RAS*) V.A. Vershkov (*TsAGI*) Two approaches to numerical simulation of acoustic fields generated by movable bodies
- 17⁵⁰-18¹⁵ I.V. Abalakin, V.B. Bobkov, A.P. Duben, T.K. Kozubskaya (*IAM RAS*), S.P. Rybak ("*RSC "Energia" PJSC*") Calculation of pressure fluctuations on the surface of space missile
- 18¹⁵-18⁴⁰ A.V. Zharkov (*LLC "MS-C Software RUS"*) Solving aeroacoustics problems using the discontinuous Galerkin method in the Actran system