

RUSSIAN NATIONAL COMMITTEE ON THEORETICAL  
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SIBERIAN BRANCH OF RUSSIAN ACADEMY OF SCIENCES  
KHRISTIANOVICH INSTITUTE OF THEORETICAL  
AND APPLIED MECHANICS  
CENTRAL AEROHYDRODYNAMIC INSTITUTE

*17th INTERNATIONAL CONFERENCE  
ON THE METHODS  
OF AEROPHYSICAL RESEARCH*

**PROGRAM**

*June 30 – July 6, 2014  
Novosibirsk, Russia*

Номера секций Sections	Названия секций Section of ICMAR 2014	Председатель секции Chair
1	Аэродинамические трубы, газодинамические установки и методы диагностики; Wind Tunnels and Gas-Dynamic Facilities, Methods of Flow Diagnostics	<i>В. И. Запрягаев</i> <i>V. I. Zaprugaev</i>
2	Гидродинамическая устойчивость, турбулентность и отрыв Stability, Turbulence, Separation	<i>В. В. Козлов, А. В. Довгаль</i> <i>V. V. Kozlov, A. V. Dovgal</i>
3	Аэрогазодинамика внутренних и внешних течений Gas Dynamics of Internal and External Flows	<i>А. М. Харитонов, Е.А. Бондарь</i> <i>A. M. Kharitonov, Ye. A. Bondar</i>
4	Методы аэрофизических исследований в междисциплинарных задачах; Methods of Aerophysical Research in Interdisciplinary Problems	<i>О. Б. Ковалев, В. Ф. Косарев</i> <i>O. B. Kovalev, V. F. Kosarev</i>
5	<i>Круглый стол. Проблемы преподавания гидромеханики и технологий машиностроения</i> <i>Round table. Training Problems of Fluid Mechanics and Engineering Technology</i>	<i>В. М. Фомин</i> <i>V. M. Fomin</i>
6	<i>Круглый стол. Программные пакеты для расчетов гиперзвуковой аэродинамики летательных и космических аппаратов</i> <i>Round table. Codes for numerical simulation of hypersonic aerodynamics of aircraft and spacecraft</i>	<i>В. М. Фомин, А. Н. Шиплюк</i> <i>V. M. Fomin, A. N. Shiplyuk</i>
7	<i>Круглый стол. Применение оптических методов</i> <i>Round table. Application of optical techniques</i>	<i>Д. М. Маркович</i> <i>D. M. Markovich</i>

## ICMAR 2014 PROGRAM COMMITTEE

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## TIMETABLE

Monday June 30		Tuesday July 1		Wednesday July 2		Thursday July 3		Friday July 4		Saturday July 5		Sunday July 6	
8:00 Registration		8:30 Registration		8:30 Registration		8:30 Registration		8:30 Registration		9:00		10:00	
9:00		9:00		9:00		9:00		9:00				city tours	
Room 1	Opening of the Conference	Room 1	Section 2	Room 1	Section 2	Room 1	Section 3	Room 1	Section 3	Room 3	Section 5 Round table		
9:20		Room 2	Section 1	Room 2	Section 1	Room 2	Section 1	Room 2	Section 4	Room 1	Section 4 Shot presentation		
Room 1	Invited papers					Room 3	Round table			Foyer	Section 4 Posters		
10:40 Coffee break		10:40 Coffee break		10:40 Coffee break		10:40 Coffee break		10:40 Coffee break		10:40 Coffee break			
11:00		11:00		11:00		11:00		11:00		11:00			
Room 1	Invited papers	Room 1	Section 2	Room 1	Section 2	Room 1	Section 3	Room 1	Section 3	Room 3	Section 5 Round table		
		Room 2	Section 1	Room 2	Section 1	Room 2	Section 4	Room 2	Section 4	11:40			
						Room 3	Round table			Room 1	Closing of ICMAR 2014		
12:30 Lunch		12:40 Lunch		12:40 Lunch		12:40 Lunch		12:40 Lunch		13:00 Lunch			
14:00		14:00		14:00		14:00		14:00					
Room 1	Section 2	Room 1	Section 2	Room 1	Section 2	Room 1	Section 3	Room 1	Section 3				
Room 2	Section 1	Room 2	Section 1	Room 2	Section 3	Room 2	Section 4	Room 2	Section 4				
15:40 Coffee break		15:40 Coffee break		15:40 Coffee break		15:40 Coffee break		15:40 Coffee break					
16:00		16:00		16:00		16:00		16:00					
Room 1	Section 2	Room 1	Section 2 Shot presentation	Room 1		Room 1	Section 3	Room 1	Section 3	Excursions on Institutions SB RAS (ITAM, LIH, IT)			
		Foyer	Section 2 Posters										
Room 2	Section 1	Room 2	Section 1 Shot presentation	Room 2	Section 3 Shot presentation	Room 2	Section 4	Room 2	Section 4				
		Foyer	Section 1 Posters		Foyer								Section 3 Posters
19:00 Welcome reception			*			19:00	Banquet						

## Monday June 30

<b>Time</b>	<b>8.00</b>	<b>Registration of participants</b>	
<b>9:00</b>		<b>Opening of the Conference Chair – V.M. Fomin</b>	
		<b>Special session, Chair – A.A. Maslov</b>	
<b>9:20</b>		<b>A.M. Kharitonov (ITAM). The 100th anniversary of academician V. V. Struminsky (Invited paper)</b>	
<b>9:55</b>		<b>S.L. Chernyshev (TsAGI). On the modern control methods of flying vehicles (Invited paper)</b>	
<b>10:40</b>		<b>A.B. Struminsky. Why mechanics but not quantum mechanics? First steps of V.V. Struminsky in science. (Invited paper)</b>	
<b>11:00</b>		<b>Coffee break, hall</b>	
		<b>Special session, Chair – S.L. Chernyshev</b>	
<b>11:20</b>		<b>A.N. Seryeznov, V.G. Sokolov, S.V. Sokolov, V.L. Chemezov, V.A. Mymrin, Yu.N. Temlyakov, Yu.K. Buldakov. (SibNIA) (Invited paper)</b>	
<b>11:50</b>		<b>V.I. Zvegintsev (ITAM) Short-duration facilities for aerodynamic research at ITAM (Invited paper)</b>	
<b>12:20</b>		<b>A.N. Shiplyuk (ITAM). Supersonic Tunnel Association, International (STAI) (Invited paper)</b>	
<b>12:40</b>		<b>Lunch</b>	
<b>Time</b>	<b>Section 2, Small Hall of Scientific House, Chair: Viktor Kozlov</b>		<b>Section 1, Room 220: Chair: Dmitry Markovich</b>
<b>14:00</b>	ID 68 Vladimir Shalaev (MIPT, Dolgoprudny), V.V. Struminsky and 3D boundary layer theory development		ID 303 Eduard Son (JIHT RAS) A.V. Glushneva, A.S. Saveliev, D.V. Tereshonok. Active effect on supersonic air flow impulse and constant heating at the surface of the aerodynamic model
<b>14:20</b>	ID 290 Sergey Gaponov (ITAM), V.V.Struminsky – founder and first head of the scientific field of hydrodynamic stability and laminar-turbulent transition		ID 191 Vladimir Radchenko (TsAGI), M.A.Goldfeld, V.E.Mosharov, A.V.Starov, K.Yu.Timofeev. Problems of investigation of boundary layer transition by temperature sensitive paint in impulse wind tunnel IT-302
<b>14:40</b>	ID 48 Aleksandr Gaifullin (TsAGI), N.N. Kiselev, A.A. Korniyakov. Flow stability near a plate with a surface moving against an incoming stream		ID 258 Galina Zharkova (ITAM), V.N. Kovrizhina, A.P. Petrov. Panoramic liquid crystal indicators of shear stresses: three effects and three approaches to measurements
<b>15:00</b>	ID 154 Tatiana Poplavskaya (NSU, ITAM), S.V. Kirilovskiy (NSU), I.S. Tsyryulnikov(NSU, ITAM). Effect of excitation of vibrational degrees of freedom of molecules on the evolution of disturbances in hypersonic flows		ID 58 Mundt Christian (University of the Federal Armed Forces Munich, Neubiberg, Germany), T. Sander, P. Altenhöfer. Temperature Measurements in a Shock Tube using Laser-Induced Grating Spectroscopy
<b>15:20</b>	ID 32 Mikhail Ivanov (CIAM), V.K. Mamaev, L.V. Terentieva. Integrals of nonlinear evolution equations of motion, solitons, noise and turbulence of dispersive medium		ID 132 Albert Latypov (ITAM), V.A. Derevyanko, S.V. Kukushkin. Pressure measurements in the gas flow in short-duration wind tunnels
<b>15:40</b>	<b>Coffee break, hall</b>		
<b>Time</b>	<b>Section 2, Small Hall of Scientific House, Chair: Sergey Gaponov</b>		<b>Section 1, Room 220: Chair: Vadim Lebiga</b>
<b>16:00</b>	ID 283 Alexander Kosinov (ITAM), Yu.G. Yermolaev, G.L. Kolosov, A.V. Panina, N.V. Semionov. On the effect of the incident Mach's wave on the pulsation level in boundary layer of the plane delta wing		ID 71 Evgeny Stolyarov (TsAGI). The transient processes and their influence on systematic errors of thermal measurements with thin-film sensors
<b>16:20</b>	ID 271 Maxim Ustinov (TsAGI). Generation of Tollmien – Schlichting waves by flow turbulence		ID 151 Aleksey Malov (ITAM), A.M. Orishich. Registration of the optical radiation at the study of the thermal wake after the optical pulsing discharge in a supersonic air flow
<b>16:40</b>	ID 54 Yury Grigoryev (ICT SB RAS), I.V Ershov. Linear and nonlinear stability of the supersonic Couette flow of vibrationally excited gas		ID 239 Andrey Shevchenko (ITAM). Methodical and metrological problems of measuring the air data parameters with multihole pressure systems

<b>17:00</b>	ID 227 Dmitry Khotyanovsky (NSU, ITAM), A.N. Kudryavtsev (NSU, ITAM). DNS of supersonic boundary layer transition	ID 269 Anatoly Kolesnikov (IPMech RAS), A.N. Gordeev, S.A. Vasilevskii. Study of heat transfer and predicting surface catalycity for metals and quartz for exomars entry conditions
<b>17:20</b>	ID 80 Sergey Aleksandrov (MIPT, Dolgoprudny), A.V. Vaganov, V.I. Shalaev. Numerical study of a hypersonic flow structure over a delta wing with blunted leading edges	ID 261 Boris Boshenyatov (IAM RAS), V.N. Bakulin, V.V. Popov. Gas pressure distribution in U-shape hollow fiber membranes with porouse wall
<b>17:40</b>	ID 16 Natalia Terekhova (ITAM). Features of the development of natural and controlled disturbances into the weakly nonlinear region for supersonic boundary layers at $M = 2$	ID 280 Vyacheslav Lagutin (TsNIIMash, Korolev), V.N. Andreev, V.A. Kozlovskii Tubular strain-gauge balance for jet models wind tunnel tests
<b>18:00</b>	ID 254 Vladimir Borodulin (ITAM), A.V. Ivanov, Y.S. Kachanov, D.A. Mischenko. Experimental investigation of characteristics of steady and unsteady crossflow-instability modes developing in a 35-degree swept-airfoil boundary layer	ID 219 Anatoly Lokotko (ITAM). Implementation of the "doubling" method in aerodynamic experiment with suspension of the ducted models to the side pylon
<b>18:20</b>		ID 200 Andrey Semenov (NSTU), A.A. Kuraev. Expendable-pressure characteristics of hydrodiode.
<b>19:00</b>	<b>Welcome reception</b>	

## Tuesday July 1

Time	Section 2, Small Hall of Scientific House, Chair: Maxim Ustinov	Section 1, Room 220: Chair: Vladimir Lapygin
<b>9:00</b>	Plenary paper ID 285 Vladimir Kornilov (ITAM), A.V. Boiko. Passive and active methods of turbulent boundary-layer control: Practical experience and outlook of application	ID 83 Konstantin Arefiev (CIAM), V.J. Aleksandrov. Numerical simulation and selection pall cooling gasdynamic canal ID 82 Van Tien Bui (Bauman MSTU), V.I. Lapygin. Numerical simulation of a flow around a model in test section of low-speed wind tunnel
<b>9:40</b>	ID 91 Vitaly Soudakov (TsAGI), I.V. Egorov, A.V. Fedorov. Numerical study of laminar-turbulent transition on a sharp cone with local heating or cooling	ID 250 Igor Golovnev (ITAM) E.I. Golovneva, V.M. Fomin, B.M. Kuchumov, I.K. Igumenov. The simulation of heat and mass exchange of gas in nanopores by molecular dynamics method
<b>10:00</b>	ID 146 Yury Gromyko (NSU, ITAM), D.A. Bountin (NSU, ITAM), P.A. Polivanov (NSU, ITAM), A.A. Sidorenko (NSU, ITAM), A.A. Maslov (NSU, ITAM). Investigation of effects of local wall heating and cooling on hypersonic boundary-layer transition by means of schlieren visualization	ID 135 Ignaty Mazhul (ITAM), V.F. Volkov, V.I. Zvegintsev. Numerical estimations of sweep pylon influence on aerodynamic characteristics of the model tested in supersonic wind tunnel
<b>10:20</b>	ID 52 Igor Bosnyakov (TsAGI), G.G. Soudakov. Decay mechanisms in far vortex wake behind the plane	ID 181 Dmitry Minyushkin (TSNIImash). Set level method for ablation of heat protection material calculation using OpenFOAM
<b>10:40</b>	<b>Coffee break, hall</b>	
Time	Section 2, Small Hall of Scientific House, Chair: Sergey Mironov	Section 1, Room 220: Chair: Victor Boiko
<b>11:00</b>	ID 140 Victor Kudryavtsev (TSNIImash), Yu.V. Gromyko (NSU, ITAM), D.A. Bountin (NSU, ITAM), A.A. Sidorenko (NSU, ITAM), R.V. Kovalev, A.L. Kusov, N.F. Rudin. Experimental investigations of local heating/cooling effect on laminar-turbulent boundary layer transition over 7°-half angle cone model in U-6 hypersonic wind tunnel	Plenary paper ID 241 Dmitry Markovich (ITP SB RAS) Optical whole-field techniques for aerodynamical and thermophysical research
<b>11:20</b>	ID 198 Vladimir Kosorygin (ITAM). Experiments on laminar boundary layer over locally-heated surface under pressure gradients	
<b>11:40</b>	ID 40 Andrey Boiko (ITAM), A.V. Dovgal, A.M. Sorokin. Backward-facing step flow affected by a local surface temperature variation	ID 196 Ilya Zverkov (ITAM), V. Kozlov, A. Kryukov. Investigation of RMS pulsation in the boundary layer of the wing with wavy surface by PIV measurements
<b>12:00</b>	ID 201 Tatiana Bogatko (ITP SB RAS), V.I. Terekhov. Factors affecting the characteristics of the subsonic turbulent separated flow	ID 103 Andrey Pivovarov (ITAM), V.I. Zapryagaev, V.M. Boiko, N.P. Kiselev. Cellular structure investigation of supersonic underexpanded jets by using PIV method
<b>12:20</b>	ID 149 Andrey Sidorenko (NSU, ITAM), P.A. Polivanov(NSU, ITAM), O.I. Vishnyakov,(NSU, ITAM), A.A. Maslov,(NSU, ITAM). Transition effect on shock wave / boundary layer interaction at M=1.5	ID 291 Dmitry Yarantsev (JIHT), S.B. Leonov, A.A. Firsov, M.A. Bolshov, Yu.A. Kuritsyn, V.V. Liger, V.R. Mironenko. Laser absorption measurements in plasma-assisted supersonic combustor
<b>12:40</b>	<b>Lunch</b>	
Time	Section 2, Small Hall of Scientific House, Chair: Andrey Boiko	Section 1, Room 220: Chair:
<b>14:00</b>	Plenary paper ID 85 Sergey Gaponov (ITAM), N.M.Terekhova. Influence of the porous covering properties on stability and three –wave resonance of the supersonic boundary layer in the conditions of the longitudinal pressure gradient	Plenary paper ID 202 Lucia Bustin (TSI GmbH 52068, Aachen, Germany), J. Stefanini, D. Troolin. Volumetric 3-component velocimetry on the flow at the exit of a pipe – the newest development in velocimetry diagnostic
<b>14:40</b>	ID 143 Boris Smorodsky (ITAM),Y.G. Ermolaev, A.D. Kosinov, V.I. Lysenko, N.V. Semionov. Experimental investigations on the influence of porous coating thickness on stability and transition of supersonic boundary layer	ID 284 Victor Boiko (ITAM), S.V. Poplavski, A.A. Pivovarov. Reconstruction method of gas velocity in supersonic underexpanded jets from PIV data

<b>15:00</b>	ID 127 Sergey Mironov (NSU, ITAM), V.A. Kolotilov (NSU), T.V. Poplavskaya (NSU, ITAM). Control of supersonic flow around a bodies using a gas-permeable porous materials	<b>Round table, application of optical methods Chair: Dmitry Markovich</b> ID 204 Lucia Bustin (TSI GmbH 52068, Aachen, Germany), Leonid Isaev. The features of TSI POWERSIGHT LDV & PDPA systems ID 205 Leonid Isaev (TSI), L. Bustin. PIV/PLIF systems for mass and thermo flows research.
<b>15:20</b>	ID 138 Ivan Tsyryulnikov (ITAM), S.V. Kirilovskiy, T.V. Poplavskaya. Efficiency of sound-absorbing coatings in a thermally perfect nonequilibrium gas flow	
<b>15:40</b>	<b>Coffee break, hall</b>	
<b>Time</b>	<b>Section 2, Small Hall of Scientific House, Chair: Alexandr Vaganov</b>	<b>Section 1, Room 220: Chair: Valery Zapryagaev</b>
<b>16:00</b>	ID 64 Hui Yong Zhao (CARDIC, Mianyang, China), M.R. Yi, H.L. Ni, W.X. Liu. Test of Forced Boundary-layer Transition on Hypersonic Inlet	<b>Round table, application of optical methods Chair: Dmitry Markovich</b> ID 267 Lucia Bustin (TSI GmbH 52068, Aachen, Germany). Time resolved PIV for turbulence evolving in fast changing flow ID 268 Lucia Bustin (TSI GmbH 52068, Aachen, Germany ). PIV extension as GSV (global sized velocimetry) used in spray and droplet study.
<b>16:20</b>	ID 66 Arkady Skuratov (TsAGI), V. Borovoy, I. Egorov V. Mosharov, V. Radchenko, I. Struminskaya. Shock waves/turbulent boundary layer interference near a fin and a pair of fins at the presence of entropy layer	
<b>16:40</b>	ID 173 Jian Fang (Beihang University, Beijing, China), L. Lu Y. Yao, L. Lu, A.A. Zheltovodov. Direct numerical simulation of supersonic turbulent flow in expansion-compression corner	
<b>17:00</b>	<b>Section 2, Short presentations</b> <b>Chairs: Alexandr Vaganov, Boris Zanin</b>	<b>Section 1, Short presentations</b> <b>Chairs: Valery Zapryagaev, Nikolai Kisilev</b>
<b>18:00</b>	<b>Section 2, Foyer of Small Hall of Scientific House, Posters Session</b>	<b>Section 1, Foyer of Small Hall of Scientific House, Posters Session</b>

### Posters Session, section 2

1. ID 14 Natalia Terekhova (ITAM). Stability control of a supersonic boundary layer using distributed mass transfer through the porous wall
2. ID 27 Victor Kulik (ITP SB RAS). Boundary condition on a compliant wall under the turbulent flow
3. ID 30 Sergey Gaponov (ITAM), N.M.Terekhova. Influence of the longitudinal pressure gradient on the boundary layer stability of compressed gas
4. ID 36 Aleksandr Zheltovodov (ITAM), E. A. Pimonov. Gaz jets/supersonic-flow mixing control by a localized pulse-periodic energy supply
5. ID 38 Ivan Kavun (ITAM), A.I. Maksimov. Numerical and experimental investigation of vortex system evolution near an external dihedral corner at supersonic velocity
6. ID 39 Alexander Dovgal (ITAM), A.M. Sorokin, B.Yu. Zanin. Flow separation and instability on a body of revolution at small incidence
7. ID 44 Andrey Boiko (ITAM), A.K. Khe, A.A. Cherevko, A.P. Chupakhin. On stability of pulsatile fluid flow in compliant channels
8. ID 56 Sergey Yakovenko (ITAM). Density drop effects in evolution of the two-fluid interface
9. ID 102 Aleksandra Panina (ITAM), A.D. Kosinov, N.V. Semionov, Yu.G. Yermolaev. On artificial disturbance evolution in spanwise modulated boundary layer on swept wing at Mach 2.5
10. ID 81 Sergey Aleksandrov (MIPT, Dolgoprudny), A.V. Vaganov, V.I. Shalaev. Experimental study of heat transfer on a delta wing with blunted leading edges in hypersonic flow
11. ID 121 Yury Kachanov (ITAM), V.I. Borodulin. Reproducibility of instantaneous and statistical characteristics of the deterministic wall turbulence
12. ID 122 Dmitry Bountin (NSU, ITAM), A. Maslov (NSU, ITAM), A. Sidorenko (NSU, ITAM), Yu. Gromyko (NSU, ITAM), P. Polivanov (NSU, ITAM). Cross-correlation analysis of wave packets in hypersonic boundary layer



13. ID 123 Mikhail Katasonov (ITAM), V.V.Kozlov, P.A.Motyrev. Experimental study of localized disturbances generated from the free stream at straight and swept wing boundary layer
14. ID 130 Stepan Tolkachev (ITAM), V.N. Gorev, V.V. Kozlov. Investigation of cross-flow vortices and their secondary instability excited by the roughness element on the swept wing leading edge
15. ID 134 Andrey Dryasov (ITAM), N.V. Semionov, A.D. Kosinov, Yu.G.Yermolaev. Experimental study of receptivity of supersonic boundary layer on swept wing at Mach number 2.5
16. ID 47 Vladimir Shvedchenko (TsAGI), I.V. Egorov. Influence of small spatial perturbations of supersonic flow velocity on the heat flux to the cylinder surface
17. ID 6 Andrey Boiko (ITAM), V.I. Kornilov. Wind-tunnel simulation of thick turbulent boundary layer with a grid of rods
18. ID 22 Aleksei Yatskikh (ITAM), Yu.G. Yermolaev, A.D. Kosinov, N.V. Semionov. Method of the excitation of single wave packet in supersonic boundary layer

### Posters Session, section 1

19. ID 37 Viacheslav Chekhov (ITAM), Yu.M. Prikhod'ko, V.P. Fomichev. Experimental research of heat-exchange characteristics of the diametrical disk fan
20. ID 104 Victor Zaikovskii (ITAM). Flow-rate characteristics of vortex ejectors
21. ID 148 Valentin Shumskii (ITAM), M.I. Yaroslavtsev (NSU, ITAM). Formation and heating of carbon dioxide as a test gas to be used in a hotshot wind tunnel
22. ID 176 Stepan Tolkachev (ITAM). Liquid crystal thermography method for investigation the flow after the roughness element on the leading edge of the swept wing
23. ID 224 Tatyana Bobarykina (ITAM). On the conditions of the quasi-stationary pulse-periodical energy supply into a supersonic flow
24. ID 229 Vladimir Yakovlev (DTIDT SB RAS), V.V. Garkusha, V.M. Gilyov, A.S. Mishnev, S.I. Shpak. The structure of the distributed information and measuring complex for data acquisition of hypersonic wind tunnel based on adiabatic compression
25. ID 230 Aleksei Melnikov (ITAM). Modeling of supersonic viscous flow in tube of constant section
26. ID 125 Vladimir Aniskin (NSU, ITAM), S.G. Mironov (NSU, ITAM), I.S. Tsurulnikov (NSU, ITAM), I.V. Timofeev. Experimental study of the supersonic two-dimensional microjets structure
27. ID 136 Stanislav Kirilovskiy (NSU, ITAM), T.V. Poplavskaya (NSU, ITAM), I.S. Tsyryulniko (NSU, ITAM). Numerical simulation of a thermally perfect nonequilibrium gas flow in a wind tunnel
28. ID 248 Dmitry Vnuchkov (ITAM), L.G. Vasenev, V.I. Zvegintsev, D.G. Nalivaychenko. Investigation of star-shaped air inlet characteristics
29. ID 249 Aleksandra Shumakova (NSU), A.V. Kashkovsky (NSU, ITAM), Y. Bondar (NSU, ITAM). Surface chemistry models for DSMC method
30. ID 252 Dmitry Mironov (ITAM), V.A. Lebiga, V.N. Zinoviev, A.Yu. Pak, K.M. Chung. Effect of vicinity of channel walls on flow over shallow cavity
31. ID 253 Andrey Shmakov (ITAM), A.M. Shevchenko, A.M. Kharitonov. Visualization and simultaneous pulsation characteristics measurement in problems of vortex wake / shock interactions
32. ID 257 Galina Zharkova (ITAM), A.P. Petrov. Investigation of the microparticles influence on the film pressure indicator characteristics
33. ID 273 Ivan Kazanin (ITAM), V.M. Fomin, V.A. Lebiga, V.N. Zinoviev, A.S. Vereshchagin, A.Y. Pak. Experimental stand for simulation of helium extraction from natural gas using composite sorbent based on hollow microparticles
34. ID 266 Irina Schweigert (ITAM), A.L. Alexandrov, P.A. Bokhan, D.E. Zakrevsky. Formation of electron beam in high-voltage pulse open discharge
35. ID 279 Aleksey Pak (ITAM), R.A. Melnichuk. Calibration of hot-wire probe in the couette flow
36. ID 175 Sergey Kundasev (ITAM), V.I. Zapryagaev, I.N. Kavun. Experimental and CFD investigation of the supersonic jet exhausting from a skewed nozzle
37. ID 186 Maxim Alexeev (Surgut State University, CyppT), E.V. Samsonov, E.A. Lashmanova, N. A. Nenahova. Thermal imaging study of nonisothermal flow of transparent liquid or gas
38. ID 177 Yulia Zakharova (ITAM), N.N. Fedorova, M.A. Goldfeld, G.A. Pozdnyakov, K.Yu. Timofeev, I.A. Fedorchenko. Numerical and experimental study of pulsating jets

## Wednesday July 2

Time	Section 2, Small Hall of Scientific House, Chair: Valery Molochnikov	Section 1, Room 220: Chair: Viktor Terekhov
9:00	Plenary paper ID 106 Yury Kachanov (ITAM), V.I. Borodulin, A.V. Ivanov, J.D Crouch, L.L. Ng. Criteria of swept-wing boundary-layer transition and variable N-factor methods of transition prediction	ID 206 Aleksei Troshin (TsAGI). Application and modification of a Reynolds stress model in problems of jets outflow
		ID 10 Nikolay Petrovich Kiselev (ITAM), D.A. Gubanov, V.I. Zapryagaev, A.A. Pivovarov. Complex experimental investigation of the supersonic axisymmetric underexpanded jet
9:40	ID 89 Hanifi Ardeshir (FOI, Sweden), P.H. Alfredsson, S. Imayama, R. Örlü, N. Tillmark, J. Vernet, S. Hein, D.G. Romano, M. Minervino, W. Würz, V.I. Borodulin, A.V. Ivanov, Y.S. Kachanov. Numerical and experimental realization of an infinite-swept-wing boundary-layer flow in a wind tunnel	ID 246 Victor Gilyov (ITAM), V.V. Garkusha, V.I. Zvegintsev, S.V. Lukashevich, A.S. Mishnev, A.N. Shpilyuk, S.I. Shpak, V.V. Yakovlev. The automated system of data acquisition and management of the short duration high speed wind tunnel
10:00	ID 238 Dmitry Mischenko (ITAM), A.V. Ivanov, Y.S. Kachanov. Excitation of Görtler-instability modes in concave-wall boundary layer by longitudinal freestream vortices	ID 225 Tatyana Bobarykina (ITAM), A.N. Malov, A.M. Orishich, V.F. Chirkashenko, V.I. Yakovlev. Wave structure in the supersonic air flow with the pulse-periodical discharge
10:20	ID 223 Boris Zanin (ITAM), A.M. Pavlenko, M.M. Katasonov. Boundary layer separation from a flying wing model at low Reynolds numbers	ID 242 Irina Schweigert (ITAM), M. Keidar. Control of plasma wall interaction for electric propulsion device
10:40	<b>Coffee break, hall</b>	
Time	Section 2, Small Hall of Scientific House, Chair: Vladimir Kornilov	Section 1, Room 220: Chair: Sergey Mironov
11:00	ID 35 Aleksandr Zheltovodov (ITAM). Incipience conditions and specific stages of development of supersonic turbulent separated flows	ID 179 Vadim Lemanov (ITP SB RAS), V.M. Aniskin (NSU, ITAM), S.G. Mironov (NSU, ITAM), V.I. Terekhov, K.A. Sharov. The range of subsonic and supersonic mini and microjets
11:20	ID 49 Renat Tugazakov (TsAGI), I.I. Lipatov. Transverse structures in 3D separated flows and associated flow oscillations	ID 187 Viktor Terekhov (ITP SB RAS), S.V. Kalinina, K.A. Sharov. The features of the impinging annular jet near an obstacle
11:40	ID 74 Valery Molochnikov (Research Center for Power Engineering Problems of Kazan Scientific Center of RAS), A.V.Malyukov, O.A. Dushina, N.I.Mikheev, A.A.Paereliy. Influence of imposed nonstationarity on transient laminar-turbulent separated flow begin obstacle in channel	ID 124 Vladimir Aniskin (NSU, ITAM), S.G. Mironov (NSU, ITAM), I.S. Tsyrlnicov (NSU, ITAM). Influence roughness of micronozzle on supersonic core length of underexpanded microjet
12:00	ID 194 Valery Zapryagaev (ITAM), I.N. Kavun. Generation streamwise vortices near reattached region of supersonic separated flow	ID 99 Ivan Kavun (ITAM), V.I. Zapryagaev, A.V. Solotchin. Flow structure at interaction of supersonic jet with porous obstacle
12:20	ID 195 Guang Yang (Beihang University, Beijing, China), J. Fang, L. Lu. POD analysis of shock wave/turbulent boundary layer interaction	
12:40	<b>Lunch</b>	
Time	Section 2, Small Hall of Scientific House, Chair: Mikhail Katasonov	Section 3, Room 220: Chair: Aleksandr Fedorov
14:00	Plenary paper ID 43 Viktor Kozlov (ITAM), G.R. Grek, M.M. Katasonov, O.P. Korobeinichev, Yu. A. Litvinenko, A.G. Shmakov. Stability of subsonic jet flows and combustion	ID 272 Anatoly Shashkin (ITAM), T.A. Korotaeva. Analysis of perfect gas flow under condition of kinematic nonequilibrium
		ID 100 Tatiana Korotaeva (ITAM), V.P. Fomichev, A.P. Shashkin. An approximate method employed for definition of the overall aerodynamic characteristics and temperature of a blunt body at the MHD – deceleration
14:40	ID 108 Jiun-Jih Miao (NCKU, Taiwan), T. W. Jian. Characteristics of the initial disturbances in pulsating pipe flows	ID 111 Vyacheslav Yarygin (ITP SB RAS), Yu.I. Gerasimov, A.N. Krylov, A.Yu. Skorovarov, V.G. Prighodko, I.V. Yarygin. Modeling of liquid coolant film interaction with co-current gas flow with application to ISS orientation thruster

<b>15:00</b>	ID 67 Anton Noev (TsAGI), A.V.Vaganov, V.Ya. Neyland, A.S. Skuratov. Laminar-turbulent transition on body of revolution with surface breaks	ID 126 Aleksandr Kravtsov (TsAGI). An exact solution to the problem of flow past a caret wing designed on the basis of the plane shock wave and expansion flow
<b>15:20</b>	ID 73 Yury Nechepurenko (INM RAS, Moscow), A.V. Boiko, N.V. Klyshnev. The effect of wavy grooves on stability of shear flows	ID 88 Aleksei Dikalyuk (VNIIA), S.T. Surzhikov. Nonequilibrium spectral radiation behind the shock waves in martian and earth atmospheres
<b>15:40</b>	<b>Coffee break, hall</b>	
<b>Time</b>	<b>Section 2, Small Hall of Scientific House, Chair: Yury Kachanov</b>	<b>Section 3, Room 220: Chair: Eduard Vasilevskiy</b>
<b>16:00</b>	ID 13 Fang Jian (Beihang University, Beijing, China), Y. Yao, A.A. Zheltovodov, Lu L. Numerical simulations of two-dimensional and three-dimensional shock wave/turbulent boundary layer interactions	ID 119 Mikhail Yaroslavtsev (NSU, ITAM), A.A. Maslov (NSU, ITAM), V.V. Shumskii. Linear scheme of a short-duration wind tunnel with combined heating and stabilization of parameters
<b>16:20</b>	ID 147 Yury Yermolaev (ITAM) A.A. Yatskikh, A.D. Kosinov, N.V. Semionov. Evolution of the pulsed wave packet in a supersonic boundary layer	ID 20 Sergey Aulchenko (ITAM), V.I. Zvegintsev and V.M. Fomin. Analysis of trajectories for flight vehicle with ramjet engine
<b>16:40</b>	ID 55 Sergey Yakovenko (ITAM), T.G. Thomas, I.P. Castro. Instability development scenarios in breaking gravity waves	<b>Section 3, Short presentations</b> <b>Chairs: Eduard Vasilevskiy, Yevgeniy Bondar</b>
<b>17:00</b>	ID 5 Albert Kurbatskiy (ITAM), L. Kurbatskaya. RANS modelling of environment flows under stable stratification: eddy mixing of momentum and heat and global intermittency of turbulence	
<b>17:20</b>	<b>Section 2, Short presentations</b> <b>Chairs: Yury Kachanov, Andrey Boiko</b>	
<b>18:00</b>	<b>Section 2, Foyer of Small Hall of Scientific House, Posters Session</b>	<b>Section 3, Foyer of Small Hall of Scientific House, Posters Session</b>

### Posters Session, section 2

1. ID 144 Pavel Polivanov (NSU, ITAM), A.A. Sidorenko (NSU, ITAM), A.A. Maslov (NSU, ITAM). Artificial turbulization of the supersonic boundary layer by dielectric barrier discharge
2. ID 159 Sergey Morozov (ITAM), S.V. Lukashevich, A.N. Shplyuk. Experimental investigation of the effect of ultrasonically absorptive coating on disturbances in hypersonic boundary layer of a sharp cone at the angle of attack
3. ID 167 Gleb Kolosov (ITAM), A.D. Kosinov, Yu.G.Yermolaev, N.V. Semionov. On nonlinear interaction of controlled disturbances in 3D supersonic boundary layer
4. ID 192 Mariya Litvinenko (ITAM). Influence of initial conditions (including curvilinear channel) on the flow structure in jets
5. ID 228 Mikhail Mikhaelis (ITAM), B.Yu. Zanin, M.M. Katasonov. Flow around a wing model in a turbulent wake
6. ID 240 Dmitry Mischenko (ITAM), V. Borodulin, A.V. Ivanov, Y.S. Kachanov, A.A. Fedenkova. Distributed excitation of 3D Tollmien-Schlichting waves in a boundary layer with adverse pressure gradient by freestream vortices in presence of surface nonuniformities
7. ID 256 Andrey Ivanov (ITAM), V.I. Borodulin, Y.S. Kachanov. Experimental approach to investigation of excitation of crossflow-instability modes in a swept-wing boundary layer at scattering of freestream vortices on surface nonuniformities
8. ID 232 Viktor Kozlov (ITAM), A.B. Balbutsky, G.V. Kozlov. Experimental study on the influence of the acoustic field on the stability and structure of impinging microjets
9. ID 18 Natalia Terekhova (ITAM). Some peculiarities of the disturbances on the supersonic changes in the average parameters
10. ID 142 Boris Smorodsky (ITAM). Cross-flow instability mode nonlinear interactions in supersonic swept-wing boundary layer

### Posters Session, section 3

11. ID 190 Aleksey Starov (ITAM), M.A. Goldfeld, Y.V. Zakharova, K.Yu. Timofeev. Combustion initiation at supersonic speed in channel by means of the miniramjet
12. ID 46 Aleksey Konovalenko (TSU, Tomsk), V.A. Arkhipov, S.S. Bondarchuk, V.F. Trofimov. Analysis of drops dispersion composition in the ejector atomizer spray
13. ID 112 Vyacheslav Yarygin (ITP SB RAS), V.G. Prikhodko, I.V. Yarygin. Effect of flow underexpansion degree on character of near-wall liquid film at nozzle exit edge
14. ID 189 Aleksey Starov (ITAM), M.A. Goldfeld, K.Yu. Timofeev. Influence of discret rear cavity wall on ignition at supersonic speeds
15. ID 218 Nikolai Shishkin (ITP SB RAS). The effect of slot height and non-isothermality on displacements in the restricted swirl flow
16. ID 243 D.A. Vnuchkov (ITAM), L.G. Vasenev, V.I. Zvegintsev, D.G. Nalivaychenko. Experimental investigation of the aircraft with solid fuel ramjet
17. ID 63 Alina Slitinskaya (TsAGI), S.I. Skomorohov, K.I. Cherny. Study of flow peculiarities and vortex wake structure behind swept wings of moderate aspect ratio at subsonic speeds
18. ID 93 Vladimir Baev (ITAM), D.V. Chusov. Cylinder heat exchange in rectangular plane streamlined by contradirected flows
19. ID 170 Nikolay Adamov (ITAM), A.A. Dyad'kin, A.N. Krylov, L.N. Puzyrev, A.M. Kharitonov, E.A. Chasovnikov. Damping characteristics of high-velocity aerospace vehicles
20. ID 237 Mikhail Yadrenkin (ITAM), V. Fomichev. Definition of the Stuart number according to the data of MHD-flow visualization
21. ID 226 Yevgeniy Bondar (NSU, ITAM), A. Shevyrin (NSU, ITAM), S. Gimelshein (University of Southern California USA, NSU). Non-equilibrium Chemistry Modeling in Rarefied Flows: Validation against Experiments
22. ID 255 Georgy Shoev (NSU, ITAM), Y. Bondar (NSU, ITAM). Thermal nonequilibrium effects in hypersonic flow about a blunted plate
23. ID 50 Yury Gounko (ITAM) Gasdynamic design of air-intake with nose body of star-shaped cross section and with posterior internal convergent flow compression
24. ID 51 Yury Gounko (ITAM), I.N. Kavun. Numerical simulation off-design flows over a supersonic three-dimensional air-intake
25. ID 262 Semyon Borisov (NSU, ITAM), A.N. Kudryavtsev (NSU, ITAM). A numerical study of formation of cellular structure of detonations
26. ID 98 Tamara Ovchinnikova (IWEP SB RAS), O.F. Vasiliev, G.G. Chernykh. Numerical investigation of turbulent layer penetration in a stratified fluid
27. ID 45 Anna Kalinina (ITAM), V.P. Zamuraev. Numerical and analytical studies of the impact of packets of energy pulses on the supersonic flows in channels of variable section
28. ID 184 Dmitry Tukmakov (IME KazSC RAS, Kazan). The modelling of two components gas dynamics
29. ID 211 Rinat Bayanov (Institute of Mechanics and Engineering, Kazan). Numerical model of a flow around the cylinder a two-phase stream with a phase transition
30. ID 234 Pavel Vashchenkov (NSU, ITAM), A.V. Kashkovsky (NSU, ITAM), A.A. Shershnev (NSU, ITAM), A.A. Shevyrin (NSU, ITAM). Parallelization of the DSMC method for simulation of high-altitude aerothermodynamics on hybrid CPU/GPU supercomputers
31. ID 245 Anton Shershnev (NSU, ITAM), A.N. Kudryavtsev (NSU, ITAM). Kinetic simulation of near field of plume exhausting from the plane nozzle
32. ID 115 Vladimir Kozulin (ITAM), P.K. Tretyakov, A.V. Tupikin. Intensification of burning by non-stationary electrical field
33. ID 59 Ignaty Mazhul (ITAM), Yu.P. Gounko Numerical study of supersonic flows over adjacent wedges of different sweepness
34. ID 297 Konstantin Lomanovich (ITAM), B.V. Postnikov. Effect of electric-discharge plasma on the unsteady regimes of supersonic air flow impinging onto an impermeable body.
35. ID 275 Yuri Grishin, (BMSTU), V.A. Zenkin, V.N. Bakulin. Implicit schemes of method of large particles in problems of calculating gas dynamics
36. ID 172 Andrey Gorshkov (TSNIImash). Prediction of aerodynamic heating of EXOMARS descent module DM-16
37. ID 3 Aleksandr Kondratiev (MAMI). Calculation of motion of polydisperse mixture of solid particles in the stream of Newtonian liquid in a horizontal pipes
38. ID 301 Anatoly Koshcheev (Tupolev JSC),
39. ID 129 Fedor Maksimov (Institute of Mechanics MSU), N.A. Ostapenko, M.A. Zubin. "Explosive" Growth Pattern of Shock Layer When Flowing Near V-shaped Wings

### Thursday July 3

<b>9.00 – 12.00, room 102. Round table. Program packages for calculating hypersonic aerodynamics of aircraft and spacecraft, Chair: Vasily Fomin</b>		
<b>Time</b>	<b>Section 3, Small Hall of Scientific House, Chair: Anatoly Shashkin</b>	<b>Section 1, Room 220: Chair: Vitaly Zinovyev</b>
<b>9:00</b>	Plenary paper ID 288 Yury Gounko (ITAM). Actual problems aerogasdynamics of highspeed inlets	ID 251 Vadim Lebiga (ITAM), A.Yu. Pak, V.N. Zinovyev S.L. Chernyshev, A.R. Gorbushin, A.I. Ivanov. Background flow fluctuations in test sections of transonic wind tunnels ID 209 Krause Martin (IAG, Stuttgart, Germany), U. Gaisbauer, A.D. Kosinov, Y. Yermolaev, E. Krämer. Static calibration of wedge hot-film probe and determination of sensitivities for modal analysis in T-325 supersonic wind tunnel
<b>9:40</b>	ID 174 Dr. Uwe Gaisbauer (IAG, Stuttgart, Germany), B. Weigand, M.I. Yaroslavtsev. Aero-thermodynamic design of a scramjet propulsion system – ground testing	ID 278 Aleksey Pak (ITAM), V.A. Lebiga, V.V. Repkov, V.N. Zinoviev. Portable autonomous hot wire equipment for measurements in high speed flows
<b>10:00</b>	ID 84 Andrey Savelyev (TsAGI), N.A. Zlenko, S.V. Mikhaylov. Shape Optimization of the Engine Nacelle Using RANS	ID 185 Alexey Budovsky (NSU, ITAM), A.A. Sidorenko (NSU, ITAM), S.D. Salenko, V.V. Repkov. three-component constant temperature anemometer CTA3-2
<b>10:20</b>	ID 128 Dmitry Fedorov (TsAGI) V.N. Brazhko, S.M. Drozdov, V.E. Mosharov, A.S. Skuratov, V.V. Gorbatenko, P.A. Lekhov, Ya.N. Chibisov. Hypersonic flowfield and heat flux peculiarities on the new space launcher with Winged reusable first stage.	ID 139 Aleksandr Mikhailovich Sorokin (ITAM), V.M. Gilyov, G.R. Grek, I.D. Zverkov. Automated coordinate device for the wind tunnel
<b>10:40</b>	<b>Coffee break, hall</b>	
<b>Time</b>	<b>Section 3, Small Hall of Scientific House, Chair: Pavel Tretyakov</b>	<b>Section 4, Room 220: Chair: Vladimir Kosarev</b>
<b>11:00</b>	ID 94 Vladimir Baev (ITAM). Energy transformation in case of external burning	ID 53 Boris Zhestkov (TsAGI), I.V. Egorov, V.V. Shvedchenko. Investigation of thermo-protective materials catalytic properties
<b>11:20</b>	ID 96 Aleksandr Bazhaikin (ITAM), V. Baev. Burning in counter-moving jets	
<b>11:40</b>	ID 92 Roman Seleznev (VNIIA), S.T. Surzhikov. Two-dimensional computational simulation of a hydrogen-air combustion within scramjets	ID 210 Vladimir Zudov (ITAM), P.K. Tretyakov, A.V. Tupikin. Researches of methane-air mixtures combustion assisted by transverse pulse-periodic laser radiation in supersonic stream.
<b>12:00</b>	ID 21 Viktor Saren (CIAM) Aerogasdynamics of axial turbomachine flowpath	ID 28 Evgeny Kartaev (ITAM), V.P. Lukashov, S.P. Vashenko, S.M. Aul'chenko, O.B. Kovalev, V.A. Emel'kin, D.V. Sergachev. Plasmachemical synthesis of ultrafine titania powder by the chloride method
<b>12:20</b>	ID 120 Valentin Shumskii (ITAM), Yu.P. Gounko. Dual-mode combustion chamber for high-supersonic boost ramjet	ID 97 Vladimir Baev (ITAM), Frolov A.D. Thermophysical characteristics of porous Ni-Al SHS-materials
<b>12:40</b>	<b>Lunch</b>	
<b>Time</b>	<b>Section 3, Small Hall of Scientific House, Chair: Aleksei Kudryavtsev</b>	<b>Section 4, Room 220: Chair: Oleg Kovalev</b>
<b>14:00</b>	Plenary paper ID 62 Aleksandr Kraiko (CIAM), K.S. P'yankov, Ye.A. Yakovlev. The "different families" solutions in the problem of the wedge stationary flow and two-dimensional unsteady selfsimilar problems connected to them	Plenary paper ID 213 Mikhail Moshkin (ICG SB RAS), L.A. Gerlinskaya, D.V. Petrovskiy, A.V. Romashchenko, A.E. Akulov, M.V. Zhukova, K.N. Morozova, E.V. Kisileva, Y.M. Moshkin, V.I. Bukhtiyarov, S.Y. Troitskiy, V.L. Ganimedov, M.I. Muchnaya, A.S. Sadovskii, V.M. Fomin. Aerodynamic, medical and eco-evolutionary challenges in investigation of submicron- and nano-sized aerosols

<b>14:40</b>	ID 33 Mikhail Ivanov (CIAM), V.K. Mamaev, Yu.L. Serov, G.B. Zhestkov. On some thermophysics problems of external and internal aerodynamics	ID 165 Vladimir Ganimedov (ITAM), M.I. Muchnaya, A.S. Sadovskii. Unsteady field of air flow in human nasal cavity at various stages of respiratory cycle
<b>15:00</b>	ID 247 Vladimir Titarev (CC RAS). Numerical solution of kinetic equations for three-dimensional flows	ID 164 Mariya Muchnaya (ITAM), V.L. Ganimedov, A.S. Sadovskii. Numerical investigation of motion of submicron particles entering with air into human nasal cavity
<b>15:20</b>	ID 19 Kung-Ming Chung (NCKU, Taiwan), P.H. Chang, K.C. Chang, K.F. Li. An Experimental Study on compressible Round Convex-Corner Flows	ID 160 Yulia Kareva( Meshalkin Institute), M.A. Denisova, A.M. Chernyavskii, K.A. Parhomenko, A.E. Medvedev. Left ventricle modeling based on magnetic resonance tomography data
<b>15:40</b>	<b>Coffee break, hall</b>	
<b>Time</b>	<b>Section 3, Small Hall of Scientific House, Chair: Aleksandr Kraiko</b>	<b>Section 4, Room 220: Chair: Natalia Fedorova</b>
<b>16:00</b>	N.N. Yakovlev (TMKB "Soyuz"), E.A. Lukashev, E.V. Radkevich. On the possibility of the Cahn-Hilliard approach extension to the solution of gas dynamics problems	ID 57 Aleksey Medvedev (ITAM), K.A. Parhomenko. Mathematical modeling of post-infarction aneurysms in the left ventricle of the heart
<b>16:20</b>	ID 87 Konstantin Romanov (KSPU), S.V. Alekseenko, V.A. Romanov, D.V. Romanov, N.V. Kucherov, I.V. Semeonov. Differences in shock polars for hydrodynamical and fast mag-netosonic shock waves	ID 77 AleksandrChupakhin (LIH SB RAS), S.S. Simakov, N.O. Gorodnova, A.K. Khe. Mathematical modeling of flows in a net of elastic tubes
<b>16:40</b>	ID 109 Vladimir Lapygin (TSNIImash, Korolev), A.B. Gorshkov, D.M. Fofonov, T.V. Sazonova, V.A. Mikhailin. Construction of configuration for a body with high lift-drag ratio minimizing the heat flux to its side surface	ID 72 Boris Boshenyatov (IAM RAS), D.G. Lisin. Role of nonlinear and viscous effects by interacting the tsunami waves with underwater obstacles
<b>17:00</b>	ID 23 Vladislav Volkov (ITAM), V.M. Fomin, V.F. Chirkashenko, A.M. Kharitonov. Formation of SCA configuration with the tandem positioning of two wings on the fuselage	ID 212 Svetlana Afanasyeva (TSU), A.N. Ishchenko, N.N. Belov, V.V. Burkin, K.S. Rogaev, A.N. Tabachenko, N.T. Yugov. High-speed of the cermet strikers and their interaction with the steel barriers
<b>17:20</b>	ID 9 Anna Kalinina (ITAM), S.M. Aulchenko, V.P. Zamuraev. Based on the criterions prediction of structure of transonic flow around airfoils with periodic power supply	ID 24 Marat Ktalkherman (ITAM), I. G. Namyatov. Parametric analysis of process parameters on liquefied petroleum gases pyrolysis in the high-temperature heat carrier
<b>17:40</b> <b>18:00</b>	ID 133 Valery Zvegintsev (ITAM), V.F. Volkov, I.I. Mazhul. Features of aerodynamics of the axisymmetric model with large aspect ratio at angles of attack	ID 153 Anton Vereshchagin (ITAM), V.M. Fomin. Simulation of the process of helium extraction from gas mixture with microspheres
<b>19:00</b>	<b>Banquet</b>	

## Friday July 4

Time	Section 3, In memory of M.S. Ivanov, Small Hall of Scientific House. Organized with the participation the laboratory of nonequilibrium flows, NSU. Chair: Yevgeniy Bondar	Section 4, Room 220: Chair: Vladimir Baev
9:00	Plenary paper ID 287 Sergey Gimelshein (University of Southern California, USA, NSU), A.V. Kashkovsky (NSU, ITAM), Ye.A. Bondar (NSU, ITAM). In memory of M.S. Ivanov: computational rarefied gas dynamics.	Plenary paper ID 260 Lee Wen-Jay (NCHC, Taiwan), Jee-Gong Chang, Kuo-Ning Chiang, A.V. Bolesta, V.A. Lebiga, V.M. Fomin. Thermal stability of Graphene sheet on the Si surface under thermal processing: A molecular dynamics study
9:40	ID 270 Pavel Vashchenkov (NSU, ITAM), A.V. Kashkovsky (NSU, ITAM). Numerical Simulation of the trajectory and lifetime of CubeSat satellites of QB50 project	ID 276 Aleksei Bolesta (ITAM), V.M. Fomin, W.-J. Lee, J.-G. Chang, K.-N. Chiang. Modeling of thermomechanical properties of layered graphene materials
10:00	ID 274 Aleksei Kudryavtsev (NSU, ITAM), O.D. Rybdylova, A.A. Shershnev (NSU, ITAM). Numerical simulation of aerodynamic focusing of particles in supersonic micronozzles	ID 217 Amir Gubaidullin (Tyumen Branch of ITAM), A.V. Yakovenko. Numerical investigation of the vibrating gas-filled cavity with isothermal and adiabatic boundary conditions
10:20	ID 233 Alexander Shevyrin (NSU, ITAM), A.V. Kashkovsky (NSU, ITAM), P.V. Vashchenkov (NSU, ITAM), Y. Bondar (NSU, ITAM). Modelling of Ionized High-Enthalpy Flows About a Reentry Vehicle	ID 231 Michail Ramazanov (Togliatti SU) P.V.Ivashin, A.P.Shaikin. The influence of combustion activation with hydrogen addition on the flame propagation in gasoline engine
10:40	<b>Coffee break, hall</b>	
Time	Section 3, Small Hall of Scientific House, Chair: Mikhail Ivanov	Section 4, Room 220: Chair: Oleg Kovalev
11:00	ID 65 Yu ZHOU (CARDC, Mianyang, China), HUANG Yuan. Numerical Simulation of an Aero-Engine Combustor	ID 152 Aleksey Malov (ITAM), A.M. Orishich. CO <sub>2</sub> laser with mechanical Q-switching, with maximum energy characteristics
11:20	ID 131 Albert Latypov (ITAM). Functional mathematical model of a combustor of a hypersonic air-breathing engine	ID 156 Aleksandr Golyshev (ITAM), A. G. Malikov, A.M. Orishich, V.B. Shuljat'ev. Effect of the laser wave length on the energy characteristics of high-quality fusion cutting of steel
11:40	ID 137 Tatiana Poplavskaya (NSU, ITAM), S.V. Kirilovskiy (NSU, ITAM), S.G. Mironov (NSU, ITAM). Numerical modeling of the flow around a cylinder with a gas-permeable porous insert in front	ID 157 Anatoly Orishich (ITAM), A.A. Golyshev, A. G. Malikov, V.B. Shuljat'ev. Oxygen-assist laser cutting of low-carbon steel at various laser wave lengths
12:00	ID 214 Natalia Fedorova (ITAM), I.A. Bedarev, A.V. Fedorov, Yu.V. Zakharova. Numerical simulation of hydrogen ignition in channels at supersonic speeds	
12:20	ID 221 Egor Palkin (ITP SB RAS), K. Hanjalic. R. Mullyadzhanov. URANS and LES of a flow over a cylinder at Re=3900	ID 161 Vasily Shapeev (ITAM), A.N. Cherepanov, V.I. Isaev. Numerical study of temperature fields at laser welding of steel and titanium with the use of an intermediate insert
12:40	<b>Lunch</b>	
Time	Section 3, Small Hall of Scientific House, Chair: Albert Latypov	Section 4, Room 220: Chair: Vladimir Kosarev
14:00	ID 105 Victor Kovenya (ICT SB RAS). Algorithms of splitting in finite volume method	ID 113 Vladimir Kosarev (ITAM), S.V. Klinkov. Optimization of cold spraying activation by abrasive admixture
14:20	ID 302 Sergey Isaev (SUCA, Saint Petersburg) V.A. Lebiga, V.N. Zinoviev, Chang Keh-Chin, Miao Jiun-Jih. Problems of building aerodynamics for high rise constructions in the coastal region "sea-land" and improvement of package computing technologies	ID 118 Sergey Klinkov (ITAM). Effect of mask on particle velocity distribution under cold spray conditions
14:40	ID 171 Evgeny Vorozhtsov (ITAM), V.P. Shapeev. Application of the method of collocations and least residuals for numerical solution of three-dimensional Navier – Stokes equations	ID 41 Aleksey Gorobchuk (ICT SB RAS, ), Yu.N. Grigoryev. Numerical modeling of plasma-chemical etching technology in CF <sub>4</sub> /H <sub>2</sub> gas mixture

<b>15:00</b>	ID 235 Eduard Vasilevskiy (TsAGI, Zhukovsky.), I.V. Ezhov, A.V. Novikov. Blowing of a blunted cylinder nose surface in a supersonic flow by a tangential gas injection	ID 29 Sergey Kiselev (ITAM), V.P. Kiselev, V.N. Zaikovskii. Numerical simulation of the spraying process of Al particles on the tube surface by a radial nozzle
<b>15:20</b>	ID 60 Aleksandr Lutsky (KIAM RAS), A.A. Davydov, A.M. Kharitonov, A.M. Shevchenko, A.S. Shmakov. Simulation of supersonic flows in the wing wake and its interaction with crossing shock waves	ID 101 Tatiana Khmel (ITAM), A.V. Fedorov. Numerical investigation of shock wave dispersion of dusts using the model of collisional particle dynamics
<b>15:40</b>	<b>Coffee break, hall</b>	
<b>Time</b>	<b>Section 3, Small Hall of Scientific House, Chair: Anatoly Kharitonov</b>	<b>Section 4, Room 220: Chair: Aleksandr Fedorov</b>
<b>16:00</b>	Plenary paper ID 286 Evgeny Chasovnikov (ITAM), A.M. Kharitonov, N.P. Adamov. Damping characteristics of bodies at supersonic and hypersonic velocities	ID 141 Dmitry Tropin (ITAM) A.V. Fedorov. Ignition delay times in the methane-air mixture in presence of iron particles
<b>16:20</b>		ID 263 Igor Igumenov (NIIC SB RAS), Yu.V. Shevtsov, B.M. Kuchumov, I.F. Golovnev. Gas dynamic effects in micro and nanosystems in view of chemical reactions
<b>16:40</b>	ID 110 Tzong-Shyng Leu (NCKU, Taiwan), Lee C. Effects of Surface Modification on the Performance of Oscillating Heat Pipes	ID 207 Igor Bedarev (ITAM), A.V. Fedorov. Mathematical modeling of waves and temperature fields interference near the particles
<b>17:00</b>	ID 220 Yulia Kratova (ITAM), A.V. Fedorov, T.A. Khmel. Numerical Simulation of Hetero, geneous Detonation Diffraction in Cylindrical Ducts	ID 163 Sergey Poplavski (ITAM), V.M. Boiko, A.A. Pivovarov. Three modes of drop breakup in accelerating flow
<b>17:20</b>	ID 236 Vladislav Fomichev (ITAM), M. Yadrenkin. Ionization of a hypersonic air flow by electrical discharges in a magnetic field	ID 215 Aleksandr Zhilin (ITAM), A.V. Fedorov. Study of the dynamics of grain moisture extraction of pine nuts with acoustic-convective impact
<b>17:40</b>	ID 61 Vasily Zabaykin (ITAM), V.L. Kraynev, P.K. Tretyakov. Control of Combustion Regimes in a Channel at Pulse-Periodic Action	

### Saturday July 5

<b>Time</b>	<b>Section 4, Small Hall of Scientific House</b>	<b>Section 5, room 102, Chair: Vasily Fomin</b>
<b>9:00 – 10:20</b>	<b>Section 4, Short presentations Chairs: Vladimir Kosarev, Aleksey Medvedev</b>	<b>Round table. Problems of teaching of fluid mechanics and engineering technology</b> ID 244 Valery Zvegintsev (ITAM), Vnuchkov D.A., Nalivaychenko D.G., Abashev V.M., Trushlyakov V.I., Faraponov V.V. Model aerodynamic wind tunnel facility (MAF) and its application in universities for scientific research and students instruction
<b>10:20</b>	<b>Section 4, Foyer of Small Hall of Scientific House, Posters Session</b>	
<b>10:40</b>	<b>Coffee break, hall</b>	
<b>Time</b>	<b>Секция 4</b>	<b>Section 5, room 102, Chair: Anatoly Kharitonov</b>
<b>11:00 – 11:40</b>	<b>Section 4, Foyer of Small Hall of Scientific House, Posters Session</b>	<b>Round table. Problems of teaching of fluid mechanics and engineering technology</b>
<b>11:40</b>	<b>Small Hall of Scientific House, Closing of ICMAR 2014, Concluding discussions</b>	
<b>12:40</b>	<b>Lunch</b>	

### Posters Session, section 4

1. ID 31 Anna Usanina (TSU), V.A. Arkhipov. Investigation of gravitational sedimentation of particle assembly



2. ID 69 Vsevolod Nikolaev (NSU), A.A. Cherevko, A.P. Chupakhin. Hemodynamic modeling for a branched network of vessels based on the differential-algebraic equations, constructed by clinical data
3. ID 70 Nikita Denisenko (NSU), A.A. Tulupov, A.A. Cherevko, A.P. Chupahin. Modeling of cerebral vascular anomalies with Patran / Dytran software
4. ID 75 Arseny Yanchenko (NSU), A.P. Chupakhin, A.A. Cherevko. Computer modeling of arterial aneurysm stenting
5. ID 76 Anna 88. Mikhaylova (LIH SB RAS), A.A. Cherevko, A.P. Chupakhin, Krivoshapkin A.L., Orlov K.U., Panarin V.A. Identification of hemodynamic model based on experimental clinical data: inverse problem
6. ID 78 Aleksandr Khe (LIH SB RAS), Ya. V. Bazaikin, A. P. Chupakhin, A. A. Cherevko. Time series analysis with methods of persistent homology
7. ID 116 Fedor Orlenko (ITAM), V.S. Shikalov, S.V. Klinkov, N.S. Ryashin, V.F. Kosarev. Application of mask for cold spray coating production
8. ID 117 Nikolay Ryashin (ITAM), S.V. Klinkov, V.F. Kosarev, F. Bertrand. Controlling of cold spray coatings topology
9. ID 178 Svetlana Valger (Sibstrin), N.N. Fedorova. Mathematical modelling of wind action on civil structures using ANSYS FLUENT
10. ID 180 Maksim Danilov (Sibstrin), S.A. Valger, N.N. Fedorova, A.V. Fedorov. Simulation of blast action on civil structures using ANSYS / LS-DYNA and ANSYS/AUTODYN
11. ID 183 Kristina Ulzutueva (ITAM), I.A. Bedarev, A. V. Fedorov. Research of kinetic schemes of hydrogen ignition in relation to problems of the detonation
12. ID 193 Oleg Vishnyakov (ITAM) P.A. Polivanov, A.A. Sidorenko, A.A. Maslov. Study of the oscillating ion wind induced by DBD for various O<sub>2</sub>/N<sub>2</sub> concentration ratios
13. ID 197 Aleksei Lobasov (ITP SB RAS), V. Dulin, L. Chikishev, N. Matet. Optical thermometry above a flat-plate burner
14. ID 199 Dmitry Sharaborin (ITP SB RAS), N. Matet, V.M. Dulin, V.I. Kozik. Measurement of fuel-to-air ratio from emission spectra OF CH<sub>4</sub>/N<sub>2</sub>/O<sub>2</sub>/CO<sub>2</sub> flames in a model combustor
15. ID 216 Stanislav Borodin (Tyumen Branch of ITAM), N.G. Musakaev. Numerical research of the two-phase flow in a vertical well equipped with an electric centrifugal pump and located in permafrost
16. ID 222 Anton Igoshkin (ITAM), I.F. Golovnev, V.M. Fomin. Molecular dynamic simulation of interface formation in AG/CU heterostructures
17. ID 155 Pavel Ivashin (Togliatti SU) I.S. Yasnikov, A.P. Shaikin, M.P. Ramazanov. On the turbulent propagation of a flame in a closed volume
18. ID 145 Pavel Polivanov (ITAM), A.A. Sidorenko. Optimization of the hydrodynamics of left ventricular assist device
19. ID 264 Irina Zhukova (NIIC SB RAS), I.F. Golovnev, I.K. Igumenov. Investigation of interactions of palladium bis-hexafluoroacetylacetonate with silicon and copper surfaces by means of molecular dynamics
20. ID 281 Aleksei Zav'yalov (ITAM), K.V. Zobov, V.V. Syzrantsev, S.P. Bardakhanov. The associated liquid layer at nanoparticles and its influence on nanofluids viscosity
21. ID 282 Konstantin Zobov (ITAM), S.P. Bardakhanov. Light scattering parameters of the nanoparticle aerosol
22. ID 162 Sergey Poplavski (ITAM), V.M. Boiko, A.A. Pivovarov. On the drop dynamics in falling flow
23. ID 298 Nikolai Michurov (IES UB RAS), N.B. Pugacheva, A.M. Orishich, A.N. Cherepanov, A.G. Malikov. Annealings influence on structure and fatigue strength of steel 12×18h10t and titanic alloy with an intermediate copper insert laser welded seams
24. ID 166 Aleksandr Malikov (ITAM) A. M. Orishich, A. N. Cherepanov. Laser welding of light alloys with nanomodifying admixtures
25. ID 107 Vladimir Efremov (MSOU) M. Kuzmin. To the theory of nonstationary diffusiophoresis of spherical particles
26. ID 299 Natalia Pugacheva (IES UB RAS), N.S. Michurov, A.M. Orishich, A.N. Cherepanov, A.G. Malikov. Fatigue strength and destruction type of austenitic steel and titanic alloy with a copper insert laser welded seams