

Preliminary Program

April 5, Monday

08.00-09.00	Registration and Connecting participants, Technical Information
Hall	Conference-Hall
09.00-11.30	Opening Ceremony (Greetings from Officials, Welcome from ISS and Baykonur, concert)
Hall	Conference-Hall
11.30-12.30	Plenary session
11.30-11.50	Preparation for the first human space flight (for the 60th anniversary of the flight of Yu.A. Gagarin) P. Vlasov, M. Kharlamov
11.50-12.10	Space medicine from Gagarin to nowadays O.I. Orlov
12.10-12.30	Documentary film about the training to first human flight
12.30-14.00	Welcome Reception
Hall	Conference-Hall
14.00-15.20	Plenary session
14.00-14.20	Russian manned program. State and prospects V.A. Soloviev
14.20-14.40	The European Space Agency's Human Research activities: past, present and future A. Van Ombergen
14.40-15.00	Decades of fruitful Russian German cooperation in Space Life Sciences C. Rogon, K. Stang, M. Girgenrath, M. Braun, P. Graef
15.00-15.20	Half century of scientific and technical collaborations between France and Russia for bilateral Manned Space Flights L. Suchet
15.20-15.40	Break
Hall	Conference-Hall
15.40-16.00	Plenary session
15.40-16.00	The NASA Human Research Program: Overcoming the Challenges of Exploration Spaceflight S. Platts, J. McPhee
16.00-16.20	IAF celebrating the 60th Anniversary of Human Spaceflight Era Ch. Feichtinger
16.20-16.40	The Peaceful Use of Space W. Tianyi
16.40-17.00	Discussion
Hall	Conference-Hall
17.00-17.50	Moon and Mars Exploration (L. Zeleniy, O. Kotov, A. Grishin, S. Ryazanskiy, E. Fomina) <i>Round Table</i>
Moderator	A. Stepanova
18.00-18.30	Transfer to boat
18.00-20.00	Lunch

April 6, Tuesday							
08.00-09.00	Registration and Connecting participants, Technical Information						
Hall	Mussorgsky						
09.00-10.00	Plenary session						
09.00-09.20	The Investigation Of Combined Impact Of Ionizing Radiation And Hypogravity On Central Nervous System As A Key Problem Of Deep Space Missions Safety A.S. Shtemberg						
09.20-09.40	Radiobiology of the visual system M. Ostrovsky						
09.40-10.00	Neuroradiobiology Issues and Radiation Risk in Deep Space Flights E.A. Krasavin						
Hall	Mussorgsky						
10.00-10.40	Interplanetary missions. Vision of cosmonauts and astronauts (S.K. Krikalev, O.V. Kotov, GCTC, etc.) <i>Round Table</i>						
Moderator:	A. Stepanova						
10.40-11.00	Coffee Break, Short Talks						
Hall	Mussorgsky	Hall	Tolstoy	Hall	Pushkin	Hall	Chekhov
11.00-13.00	Neuroscience problems in Deep Space Missions	11.00-13.00	New approaches and concepts for SANS/VIIP risk prevention	11.00-13.00	Influence of hypomagnetic conditions in long-term space flights	11.00-13.00	Proteomics, Transcriptomics and Genomics in Space – Personalized Medicine OMICS
Chairs:	S. Robin Elgart/ A. Shtemberg r A. Kussmaul	Chairs:	C. Stern/ O.Man`ko R-r A. Smoleevskiy	Chairs:	O. Orlov / R-r O. Popova/M. Onuchina	Chairs:	Ch.H. Borchers / L. Buravkova R-r D. Kashirina
11.00-11.15	Space Radiation and Central Nervous System Impacts: NASA Standards and Evidence S.R. Elgart	11.00-11.15	Spaceflight-Associated Changes in the Perivascular Spaces of Astronauts G. Barisano, F. Sepehrband, E. Tomilovskaya, I. Rukavishnikov, I. Nosikova, L. Litvinova, A. Rumshiskaya, V. Petrovichev, V. Sinitsyn, E. Pechenkova, S. Laureys, J. Sijbers, B. Jeurissen, S. Sunaert, P. Parizel, S. Jillings, H. R. Collins, M. Law, A. Grishin, D. Roberts, Floris L. Wuyts	11.00-11.15	Experiment to study the impact of hypomagnetic fields on the organism of a person «ARFA-19» V.Yu. Kukanov, M.R. Onuchina, A.L.Vasin, O.I. Orlov	11.00-11.15	Space flights associated changes in astronauts plasma exosomes derived rna: biomarker identification D.A. Goukassian, M. Truongcao, P. Dubey, C. Gonzalez, A. Bajpai, Z. Cheng, M.K. Khlgatian, A. Arakelyan, P. Mills, K. Walsh, S. Addya, A. Evans, M. Coleman, A. Brojakowska , K. Fish, R. Kishore, V.N.S. Garikipati

11.15-11.30	Effects of cranial proton irradiation on visuomotor behaviour in nonhuman primates L.V. Tereshchenko, I.D. Shamsiev, I.V. Bondar, E.A. Krasavin, A.V. Latanov	11.15-11.30	Optic Nerve Head Study In Space Flight I.A. Makarov, I.V. Alferova, V.V. Bogomolov, Yu.I. Voronkov, V.V. Krivolapov, E.G. Khorosheva	11.15-11.30	Arfa-19 experiment: simulation of the magnetic field under exposure conditions M.R. Onuchina, A.L. Vasin	11.15-11.30	Changes in the profile of proteins associated with the functions of the cardiovascular system in space and ground-based model experiments V.B. Rusanov, L.Kh. Pastushkova, A.M. Nosovsky, I.M. Larina
11.30-11.45	Long-term cns effects of low-dose galactic cosmic radiation on wildtype and alzheimer's-like mice M.K. Schroeder, B.R. Price, K.A. Khan, B.J. Caldarone, C.A. Lemere	11.30-11.45	The functional state of the optic nerve after a long-term space flight S.N. Danilichev, O.M. Manko	11.30-11.45	The influence of 8-hour's compensation of the Earth's magnetic field on the autonomic regulation of the heart E.Yu. Bersenev, A.L. Vasin, V.Yu. Kukanov, O.I. Orlov	11.30-11.45	Transcriptomic signatures and upstream regulation in human skeletal muscle induced by inactivity and aerobic exercise: a meta-analysis D. V. Popov, P. A. Makhnovskii, R. O. Bokov, F.A. Kolpakov, O. L. Vinogradova
11.45-12.00	Individual characteristics of central nervous system as an important factor of radioresistance A.A. Perevezentsev, A.G. Belyaeva, K.B. Lebedeva-Georgievskaya, A.S. Shtemberg	11.45-12.00	Eye examinations in bed rest studies to maintain ocular health and to define successful application of countermeasures C. Stern, D. Mittelstaedt, S. Stupp, K. Klink, M. Pittius, S. Ritter, A. Händel	11.45-12.00	Influence of reduced magnetic field on human central hemodynamics O.V. Popova, E.S. Luchitskaya, V.Y. Kukanov, V.B. Rusanov	11.45-12.00	Changes in the blood proteome of cosmonauts with external signs of microvascular injury at the first day after landing I.N. Goncharov, L.Kh. Pastushkova, M.I. Koloteva, A.G. Goncharova, T.M. Glebova, D.N. Kashirina, K.S. Kireev, I.M. Larina
12.00-12.15	The Impact of Deep Space Radiation on Cognitive Performance: From Biological Sex to Biomarkers to Countermeasures S. Rosi, K.Krukowski, K. Grue, K. Rieneker, A.R Ferguson, G. Nelson	12.00-12.15	Functional condition of the visual system under the condition of one-year wintering at the antarctic station VOSTOK N.Yu. Osetsky, O.M. Manko, E.A. Ilyin, O.I. Orlov	12.00-12.15	Parasympathetic regulation of hemodynamics in healthy men under hypomagnetic conditions A.V. Demin, A.V. Suvorov	12.00-12.10	Neuroplasticity and Microgravity: Gene Expression Profile Changes in the Medial Vestibular Nuclei and the Inferior Olive Nuclei of the Brain of Mice after a 30-Day Space Flight on the Bion-M Satellite P. Fortygina, P. Kolosov, A. Beletskyi, M. Roshchin, P. Khaitovich, P. Balaban

12.15-12.30	The Novel Extraplanetary Radiation Countermeasures Initiative (NERCI) B.J. Sishc, J. Saha, J. Zawaski, R. Elgart	12.15-12.30	Dynamics Of The Functional Activity Of The Retina After Four Months Of Isolation In A Sealed Object Simulated A Space Flight M.V. Zueva, V.V. Neroev, I.V. Tsapenko, Yu.A. Bubeev, O.M. Manko, A.E. Smoleevskiy, A.M. Aleskerov	12.15-12.30	Gas Exchange and Ventilation in Healthy Humans during 8-h Hypomagnetic Exposure J.A. Popova, A.V. Suvorov	12.10-12.20	The effect of physical activity on blood plasma proteome in 21 day head-down bed rest D.N. Kashirina, A.G. Brzhozovskiy, L.Kh. Pastushkova, A.G. Goncharova, A.S. Kononikhin, E.N. Nikolaev, Ch.H. Borchers, I.M. Larina
12.30-12.45	Molecularbiomarkersof susceptibility forlate-onset neuropathologies and multivariate modeling of individual risks for operation-relevant behavioral deficits after exposure to space radiation A.J. Wyrobek, B.M. Rabin, R.A. Britten, A.M. Mora,R.B. Gunier,H.E.Witkowska,M. Albertolle, T. Straume	12.30-12.45	Assessment Of Visual Functions During A 4-Month Isolation In The SIRIUS-19 Project Manko O.M., Gracheva M.A., Rozhkova G.I., Smoleevskiy A.E., Vasilyeva N.N.	12.30-12.45	Human pain threshold in hypomagnetic environment A.V. Polyakov, A.R. Niyazov, S.O. Fedayay	12.20-12.30	The susceptibility of volunteer's T cells to immunomodulation during long-term dry immersion A. Gornostaeva, A. Ratushnyy, L. Buravkova
12.45-13.00	Brain stem cells, new neurons, and radiation G. Enikolopov	12.45-13.00	Morphometric Status Of The Human Retina As A Biomarker Of Adaptive Plasticity And Dysfunctions Of The Central Nervous System In Chronic Stress D.A.Podyanov, O.M. Manko, M.V. Zueva, A.M. Aleskerov	12.45-13.00	Dynamics of human neurophysiological characteristics under the influence of a hypomagnetic environment D.V. Schastlivtseva, Yu.A. Bubeev, T.I. Kotrovskaya	12.30-12.45	Stress caused by psychological and physiological stress significantly changes the concentration of circulating DNA in human blood plasma P.E. Umriukhin, E.S. Ershova, S.A. Ponomarev, N.N. Veiko, S.V. Kostyuk
13.00-13.10	Irradiation effects on the cognitive trait expression and neurogenesis in laboratory mice of different genotypes I.I. Poletaeva, N.A. Ogienko, O.V. Perepelkina, A.V. Revishchin					12.45-13.00	The method for direct mass spectrometric analysis of biological samples using porous samplers I.A. Popov, S.I. Pekov, M.A. Shamraeva, D.S. Bormotov, R.E. Levin, I.M. Larina, E.N. Nikolaev
13.00-14.00	Break, Short Talks						
Hall	Mussorgsky	Hall	Tolstoy	Hall	Pushkin	Hall	Chekhov
14.00-15.30	Neuroscience	14.00-15.30	Astrobiology, Space Biology and Space Biotechnology	14.00-15.30	Radiation during deep space exploration: risk estimation and countermeasure	14.00-15.30	Multidisciplinary Studies related with Humans in Space

Chairs:	Ch.Kourtidou Papadeli/ S. Schneider/ Yu. Bubeev R-r A. Smoleevskiy	Chairs:	P. Rettberg/ V. Sychev R-r D. Komissarova	Chairs:	D. Goukassian/ V. Shurshakov R-r A. Savinkina	Chairs:	H.-C. Gunga/ A. Maillet R-r A. Kussmaul
14.00-14.10	Reduced Glial Scarring Through Hypergravity Exposure Ya. Lichterfeld	14.00-14.10	Exposure of microorganisms in outer space E.A. Deshevaia, S.V. Fialkina, A.A. Guridov, V.A. Shcherbakova, E.V. Shubralova, O.S. Tsygankov, V.K. Ilyin	14.00-14.15	Radiation Risk in Lunar Missions: Estimation and Countermeasures V.A. Shurshakov, A.V. Shafirkin, O.A. Ivanova, K.O. Inozemtsev, A.E. Lishnevskii, R.V. Tolochek	14.00-14.10	ISS – the prediction platform for exploration missions EVA performance M.M. Kharlamov, B.I. Kryuchkov, V.M. Usov, T.B. Kukoba, Y.A. Bubeev, E.V. Fomina
14.10-14.20	Cerebral activation to imagination of spatial navigation is altered after 6 months in microgravity J. Annen, E. Tomilovskaya, S. Larroque, S. Jillings, E. Pechenkova, A. Rumshiskaya, L. Litvinova, I. Nosikova, I. Rukavishnikov, A. Van Ombergen, S. Sunaert, P.M. Parizel, V. Sinitsyn, V. Petrovichev, P. zu Eulenburg, B. Jeurissen, J. Sijbers, A. Demertzi, S. Laureys, F.L. Wuyts	14.10-14.20	Resistance mechanisms of Bacillus subtilis-20 and Bacillus licheniformis-24 strains P.J. Osipova, S.V. Poddubko, D.S. Karpov			14.10-14.20	Influence of a female gender on the efficiency of work in a crew of manned spacecraft A.Yu. Kikina
14.20-14.30	Sustainable and Reversible effects of spaceflight on human brain function and connectivity S. Jillings, E. Pechenkova, E. Tomilovskaya, A. Rumshiskaya, L. Litvinova, I. Nosikova, I. Rukavishnikov, A. Van Ombergen, S. Sunaert, P.M. Parizel, V. Sinitsyn, V. Petrovichev, P. zu Eulenburg, B. Jeurissen, J. Sijbers, J. Annen, S. Laureys, A. Demertzi, F.L. Wuyts	14.20-14.30	Astrobiological aspect of the resistance of fungal communities from desert soils to the impact of the simulated Martian conditions M.O. Krluchkova, E.A. Vorobyova, A.E. Ivanova, V.S. Cheptsov, A.K. Pavlov	14.15-14.30	Radiation Dose Assessment Throughout The Solar System M.I. Dobynde, V.A. Shurshakov, J. Guo, S.I. Svertilov, O. Ploc	14.20-14.30	The results of biomedical research on board of the ISS and on Earth - a contribution to the medical support of orbital and autonomous flights A.R. Kussmaul, M.S. Belakovskiy, A.B. Sakharova
14.30-14.40	Effects of short-term isolation and chronic sleep deprivation on cognitive performance K. Brauns.,A. Friedl-Werner.,H.C. Gunga., A.C. Stahn	14.30-14.40	Pharmacological induction of hypobiosis: trends and prospects. Part I. Reversible torpor and hypothermia N.M. Zakharova, Y.S. Tarahovsky, I.S. Fadeeva, N.P. Komelina, M.O. Khrenov, O.V. Glushkova, D.A. Prokhorov, V.P. Kutysenko, A.L. Kovtun	14.30-14.45	Ground laboratory studies of radiation effect of space rays in interplanetary space V.M. Skorkin	14.30-14.45	Feasibility Study of Habitat Design Commonalities for Mars Transit and Surface Missions O. Bannova, S. Haeuplik-Meusburger

14.40-14.50	Brain Changes in Response to a Combined Exercise and Sensory Stimulation Countermeasure During Long-Duration Antarctic Missions A.C. Stahn, D.F. Dinges , D. Roalf, R.C. Gur, A. Friedl-Werner, K. Brauns, S. Mendt, H.C. Gunga, S. Kühn , A. Chouker, M. Basner	14.40-14.50	Pharmacological induction of hypobiosis: trends and prospects. Part II. Long-term pharmacological torpor with feedback-controlled drug administration Y.S. Tarahovsky, N.P. Komelina, I.S. Fadeeva , A.L. Kovtun, N.M. Zakharova	14.45-15.00	Evaluation of Ionizing Radiation Effects and Mitigation Techniques for Inflatable Space Habitats in Deep Space Missions S. Anantaram, A. Varma, P.M. Ravishankar, K.G. Vinod, P. Sankaravelayutham	14.45-15.00	An approach to define requirements and evaluation philosophy for crew comfort in short duration human spaceflight mission P.A. Ravishankar, A. Kibe, S. Vishnu, K. G. Vinod, P. Sankaravelayutham
14.50-15.00	Neurophysiological mechanisms of cognitive processes when performing operator tasks of different complexity D.V. Schastlivtseva, T.I. Kotrovskaya, B. Johannes, Yu.A. Bubeev	14.50-15.00	The motility of spermatozoa of mice and Drosophila melanogaster changes differently under modelling microgravity conditions I.V. Ogneva	15.00-15.15	Radi-N2 and Matroshka-R: Measurements of Neutron Radiation on the International Space Station (2009 – 2020) M.B. Smith, H.R. Andrews, H. Ing, E.M. Johnston, S. Khulapko, M.R. Koslowsky, R. Machrafli, I. Nikolaev, V. Shurshakov, L. Tomi	15.00-15.10	Human-systems integration needs analysis for on-board anomaly resolution during earth independent operations T. Panontin, M. Parisi, K. McTigue, Shu-chieh Wu, A. Vera
15.00-15.10	The effects of sleep disturbances on working memory are mediated by changes in melatonin level Yu.V. krainitseva, K.M. Liukovich, M.O. Shilov	15.00-15.05	Cell respiration of spermatozoa of the fruit fly Drosophila melanogaster under simulated microgravity A.A. Sukonkina, M.A. Usik, N.S. Biryukov, Yu.S. Zhdankina, I.V. Ogneva			15.10-15.25	GAUSS Precursor Mission for Mars Exploration R. Di Roberto, S. Carletta, N. Sparvieri, F. Graziani
		15.05-15.10	Transient increase in the rate of cell respiration of mouse spermatozoa under exposure to simulated hypergravity M.A. Usik, Yu.S. Zhdankina, N.S. Biryukov, A.A. Sukonkina, I.V. Ogneva				
15.10-15.20	Psychological and psychophysiological chronic stress predictors A.A. Avdeichik, O.M. Manko, Y.A. Bubeev, E.V. Kostenko	15.10-15.20	Fighting microbial biofilms in space by ESA's upcoming space microbiology and material science experiment BIOFILMS K. Siems , D. Müller , L. Maertens, R. Van Houdt , R. L. Mancinelli , N. Caplin , J. Krause , R. Demets , A. Tortora , M. Laue , F. Mücklich , C. E. Hellweg, R. Möller			15.25-15.35	«Plasma – biological object» interaction: study of basic mechanisms A.K. Martusevich, A.G. Galka, E.S. Golygina
					Lifetime risk of tumor development in c57b1/6j mice exposed to a single full body		

15.20-15.30	Microgravity induced resting-state networks' and metabolic alterations during sleep onset Ch.A. Frantzidis , I. Machairas, S. Gylou, Ch.M. Nday, S.N. Ketseridou, M. Mitsiou, Ch. Giantsios, Ch.S. Plomariti, M. Velana, A. Xatzicharistou, A. Karkala, D. Kontaxopoulou, E. Stanitsa, S. Fragkiadaki, S.G. Papageorgiou, P. Bamidis, Ch. Kourtidou-Papadeli, J. Vernikos	15.20-15.30	The microbiome of the International Space Station (ISS) P. Rettberg, M. Mora, L. Wink, I. Kögler, A. Mahnert, P. Schwendner, R. Demets, C. Cockell, T. Alekhova, A. Klingl, R. Krause, A. Zolotariof, A. Alexandrova, Ch. Moissl-Eichinger	15.15-15.30	gamma and simGCRsim radiation A. Brojakowska, M. Bissierier, M.K. Khlgatian, S. Zhang, V. Gillespie, Y. Dai, L. Hadri, D.A. Goukassian	15.35-15.40	Crystalloscopic test-system for cold plasma effects detection A.K. Martusevich, A.G. Galka, E.S. Golygina, A.N. Tuzhilkin, A.S. Fedotova
15.30-15.40	The effect of previous spaceflight on otolith-mediated ocular counter-roll in cosmonauts after long duration spaceflight C. Schoenmaekers , L. Kornilova, D. Glukhikh, G. Clément, H. MacDougall, I. Naumov, Ch. De Laet, L. Wille, S. Jillings, F. Wuyts	15.30-15.40	Green Moon Project: Encapsulated and Pressurised Habitat for Plants on the Moon (Habitability and Space Agriculture) J.M. Ortega-Hernandez, J. Pla-Garcia, J. Martinez-Frias, E. Sanchez-Rodriguez, J. Hernandez-Narvaez	15.30-16.30	Discussion	15.40-16.30	Discussion
15.30-16.30	Discussion	15.30-16.30	Discussion	Coffee Break, Short Talks			
16.30-17.00	Hall						
17.00-18.00	Mussorgsky						
	Plenary session						
17.00-17.20	NASA Artemis Missions & Human Research Opportunities L. Abadie						
17.20-17.40	NASA Update on Spaceflight Associated Neuro-ocular Syndrome: Recent Findings and Future Plans M. Stenger						
17.40-18.00	Review of Space Radiation Health Risks for Exploration Missions F.A. Cucinotta						
18.00-18.30	Discussion						

April 7, Wednesday

08.00-09.00	Registration and Connecting participants, Technical Information						
Hall	Mussorgsky						
09.00-10.00	Plenary session						
09.00-09.20	Psychological and Interpersonal Issues in Space: On-Orbit, Mars, and Beyond N. Kanas						
09.20-09.40	Biomedical Research In Antarctica and Human Flights Into Deep Space E.A. Ilyin						
09.40-10.00	Our skeleton adapts to the conditions of space flight but the return to the Earth is challenging L. Vico, V. Novikov, G. Vassilieva						
Hall	Mussorgsky						
10.00-10.40	Women in Space <i>R. Table</i>						
Moderator:	A. Stepanova						
10.40-11.00	Coffee Break, Short Talks						
Hall	Mussorgsky	Hall	Tolstoy	Hall	Pushkin	Hall	Chekhov
11.00-13.00	SIRIUS project. Psychological aspects of isolation and confinement	11.00-13.00	Studies of sensory-motor system functions in Dry Immersion and Bedrest experiments	11.00-13.00	Changes in Cardiovascular and Pulmonary Systems as a Risk of Interplanetary Missions	11.00-13.00	Medical Support in the Autonomous Flight
Chairs:	B. Vessey/V. Gushin/C. Tafforin R-r A. Savinkina	Chairs:	Dr. Jenkin/E. Tomilovskaya R-r A. Saveko	Chairs:	J. Jordan/U. Hoffmann R-r A. Salnikov	Chairs:	O. Kotov/V. Bogomolov R-r Yu. Smirnov
11.00-11.10	Features of communication of isolated crew of mixed national and gender composition with the control center D.M. Shved , V.I. Gushin, A.K. Yusupova, A.O. Savinkina, S.A. Lebedeva	11.00-11.10	Head down bed rest effects the perception of upright: perceptual support for bed rest as a microgravity analog M. Jenkin, L. R. Harris, R. Herpers	11.00-11.15	Approaches to the assessment of cardiovascular functionality at the ISS E. Luchitskaya, I. Funtova, V. Rusanov	11.00-11.15	Human Capabilities Assessments for Autonomous Missions: A Multi-Team Research Effort to Reduce Risk in the Human-System Integration Architecture for Future Deep-Space Missions S.K. Robinson, B.F. Gore, A.M. Whitmire
11.10-11.20	Self-training of the crew members of the SIRIUS 18/19 project using the 6df software D.V. Schastlivtseva , B. Johannes, T.I. Kotrovskaya, Yu.A. Bubeev	11.10-11.20	Sleep architecture changes during 21-day dry immersion Yu.V. Ukraintseva, G.V. Kovrov, S.I. Posokhov, E.Yu. Bersenev, K.A. Pikalov, D.V. Kondukova, E.S. Tomilovskaya	11.15-11.20	Arterial Stiffness assessed by estimated Pulse Wave Velocity is not affected during 6 months Spaceflight E. Luchitskaya, J-N. Hönemann, I. I. Funtova, S. Möstl, H. Reuter, J. Tank, F. Hoffmann	11.15-11.30	The role of a doctor in a long-distance space flight O.V. Kotov, M.S. Belakovskiy, A.R. Kussmaul
11.20-11.30	Emotional state dynamics and its assessment with subjective and objective methods in SIRIUS-19 experiment A.O. Savinkina, P.G. Kuznetsova, D.M. Shved, V.I. Guschin	11.20-11.30	Head-down tilt position, but not the duration of bed rest affects resting state electrocortical activity K. Brauns, A. Friedl-Werner, H.C. Gunga, A.C. Stahn	11.20-11.30	Features of heart rate variability and myocardium energy metabolism in space flight D. Yakhya, V. B. Rusanov	11.30-11.45	Spaceflight duration and the mortality of cosmonauts K.V. Betts, I.V. Bukhtiyarov, G.I. Tikhonova, I.B. Ushakov, Yu.I. Voronkov

11.30-11.40	<p>Interpersonal Interactions, Communications And Group Effectiveness Of The SIRIUS-19 Crew From Integrated Psychological And Ethological Data</p> <p>A.G. Vinokhodova, C.Tafforin, P.G. Kuznetsova, A. Savinkina, K. Eskov, V.I. Gushin</p>	11.30-11.40	<p>Strict head down tilt (HDT) bed rest: the improvement of a ground-based microgravity analogue for sans-related research</p> <p>A. Noppe, M. von der Wiesche, N. Klischies, A. Nitsche, E. Mulder</p>	11.30-11.40	<p>Prolonged exposure to chronic intermittent hypoxia: effects on cardiac autonomic modulation during sleep</p> <p>M.A. Maggioni, H.-C. Gunga, N. Hellner, S. Mendt, Lang Tapia M</p>	11.45-12.00	<p>Biofeedback system for enhanced motor control under microgravity</p> <p>J.C. Johnson, P.A. Johnson, A. Mardon</p>
11.40-11.50	<p>Emotional relationships as a way to overcome the isolation stress during spaceflight simulation</p> <p>A.G. Vinokhodova, I. Solcova, V.I. Gushin, P.G. Kuznetsova</p>	11.40-11.50	<p>Phases of adaptation to the conditions of «dry» immersion according to the neurofunctional state of volunteers</p> <p>M.A. Skedina, A.A. Kovaleva, M.G. Potapov</p>	11.40-11.50	<p>Structural and functional effects of full-body space radiation exposure on the right ventricle and lungs</p> <p>M. Bissierier, M.K. Khlgatian, C. Grano, S. Zhang, A. Brojakowska, K. Fish, D.A. Goukassian, L. Hadri</p>	12.00-12.15	<p>Mental Health in Prolonged Space Travel</p> <p>J.C. Johnson, P.A. Johnson, A. Mardon</p>
11.50-11.55	<p>Monitoring physical activity, psychological, physiological parameters and independent of environmental factors in the experiment SIRIUS-19</p> <p>E.Yu. Bersenev, V.V. Tsetlin, G.P. Stepanova, N.V. Degterenkova, S.O. Fedyay</p>	11.50-12.00	<p>Impact Of Long-Term Dry Immersion On Signaling Pathways In Human Soleus Muscle</p> <p>N.A. Vilchinskaya, O.V. Turtikova, S.A. Rozhkov, K.A. Sharlo, S.A. Tyganov, B.S. Shenkman</p>	11.50-12.00	<p>Cardiovascular Disease Risk Modeling for Astronauts: Making the Leap from Earth to Space</p> <p>Z.S. Patel, I. Plante, S.R. Blattnig, R.B. Norman, M.P. Little, L.C. Simonsen, J.L. Huff</p>	12.15-12.30	<p>On the possibility of using GVS-technology for visual flight control in extreme situations</p> <p>E. Soto, V.V. Alexandrov, K.V. Tikhonova, E.S. Tomilovskaya</p>
11.55-12.05	<p>Impact of isolation on crew performance during the SIRIUS-19 campaign</p> <p>S. Lizy-Destrez, E. Gil Calle, D. Mimoso, V. Martin Estrana, R.N. Roy, V. Peysakhovich</p>	12.00-12.10	<p>Accuracy Of Power Maintenance By Muscles Of The Shoulder Girdle After 21-Day Dry Immersion</p> <p>E. A. Orlova, O. L. Vinogradova, A. S. Borovik</p>	12.10-12.20	<p>Results and prospects of studies of changes in lower limbs veins in exposure to real and simulated microgravity</p> <p>A.V. Salnikov, G.A. Fomina</p>	12.30-12.45	<p>Pressure compression bandages for the treatment of postural hypotension following re-entry</p> <p>P.A. Johnson, J.C. Johnson, A. Mardon</p>
12.05-12.15	<p>Development and integration of a space-flight simulator for the SIRIUS Analogue Mission: SIMKSILL-RU and SIMSKILL-VR</p> <p>M.B. Bruguera, S.L. Bermúdez, R. Ewald</p>	12.10-12.15	<p>Sensorimotor Tasks During 21-Day Dry Immersionpinskaya</p> <p>I.I. Shoshina, E.S. Tomilovskaya</p>	12.20-12.30	<p>Predictions of heart rate and oxygen uptake during exercise for activities in Space</p> <p>U. Hoffmann, U. Drescher, F. Faber, J. Koschate</p>		
12.15-12.20	<p>Social research in space and military missions is the "HOUSE WITH THREE FLOORS"...</p> <p>K. Sykorova Bernardova, P. Tefelnerova, E. Chroustova, R. Bahbouh</p>	12.15-12.25	<p>Effect of 5-day Dry Immersion on the human foot morphology assessed by computer plantography and soft tissues stiffness measuring</p> <p>A.A. Saveko, L.E. Amirova, I.Yu. Ermakov, Yu.I. Smirnov, E.S. Tomilovskaya</p>	12.30-12.40	<p>Electromagnetic compatibility of cardiovascular and respiratory biomedical equipment in ground based studies of human space exploration</p> <p>A.I. Dyachenko, A.V. Orlov, A.V. Suvorov</p>		

12.20-12.25	Quantitative Approach Towards an Analysis of Structure and Dynamics of Social Relationships in Space Crews P. Tefelnerova, K. Bernardova, E. Chroustova, R. Bahbouh	12.25-12.35	The First Female Dry Immersion (NAIAD- 2020): Design and Specifics of a 3-Day Study E.S. Tomilovskaya, A.A. Saveko, L.E. Amirova, I.N. Nosikova, I.V. Rukavishnikov, R.V. Chernogorov, S.A. Lebedeva, I.Yu Ermakov, I.I. Ponomarev, I.S. Zelenskaya, T.A. Shigueva, N.V. Shishkin, V.V. Kitov, G.Yu. Vassilieva, O.I. Orlov	12.40-12.50	Reduced vagal modulations of heart rate during overwintering in Antarctica M.A. Maggioni, G. Merati, P. Castiglioni, S. Mendt, H.-C. Gunga, A.C. Stahn	12.45-13.00	Experimental estimation of the effectiveness of prospective methods of protection of the hearing organ under conditions of harmful exposure to noise L.Yu. Marchenko, E.E. Sigaleva, O.B. Pasekova, E.I. Matsnev
12.25-12.40	Summary of Human Factors Behavioral Performance Exploration Measures in SIRIUS '19 S.T. Bell, P. Roma, J. Miller, S. Whiting, L. Landon	12.35-12.45	Three days of dry immersion reduce mitochondrial respiration rate in m. soleus in women E.S. Motanova, R.O. Bokov, T.F. Vepkhvadze, E.M. Lednev, E.S. Tomilovskaya, O.I. Orlov, D.V. Popov				
12.40-12.55	Examining Teamwork of Space Crewmembers and Mission Control Personnel under Crew Autonomy: A Multiteam System Perspective U. Fischer, K. Mosier	12.45-12.50	Study Of The Effects Of Low-Frequency Electrical Myostimulation During 5-Day Dry Immersion On The Hyperreflexia And Vertical Balance N.V. Shishkin, L.E. Amirova, I.N. Nosikova, E.S. Tomilovskaya	12.50-13.00	The Advantage of Supine and Standing Heart Rate Variability Analysis to Assess Training Status and Performance in a Walking Ultramarathon M.A. Maggioni, L.C. Rundfeldt, H.-C. Gunga, M. Joerres, G. Merati, M. Steinach	13.00-13.15	Biomedical support of manned space missions beyond the low Earth orbit as an organizational control system Yu.I. Smirnov, E.Yu. Mamonova
12.55	Discussion	12.50-12.55	Effects Of High Frequency Electromyostimulation On Characteristics Of The Accuracy Of Control Of Movements Under Dry Immersion Conditions T.A. Shigueva, V.V. Kitov, Yu.A. Koryak, E.S. Tomilovskaya				
13.00-14.00	Break, Short Talks						
Hall	Mussorgsky	Hall	Tolstoy	Hall	Pushkin	Hall	Chekhov
14.00-15.30		14.00-15.30	Effects of ground-based models	14.00-15.30	Skeletal Unloading and Other	14.00-15.30	Space Psychology and Human Factors in
Chairs:	V.Abeln/V.Ilyin R-r - Yu. Popova	Chairs:	M. Maggioni/E. Tomilovskaya R-r - E. Luchitskaya	Chairs:	L. Vico/ G. Vassilieva T. Agapteva R-r	Chairs:	N. Kanas/ V. Gushin A. Savinkina R-r

14.00-14.10	Features of dynamics of the professional operators and volunteers microflora in isolation experiments of various duration V.K. Ilyin, D.V. Komissarova, N.A. Usanova, Yu.A. Morozova	14.00-14.10	Cardiovascular and autonomic effects of nutritional supplementation during longterm bed rest M.A. Maggioni, G. Merati, P. Castiglioni, S. Mendt, A. Friedl-Werner, K. Brauns, H.-C. Gunga, A. C. Stahn	14.00-14.15	Analysis of osteodensitometry data of cosmonauts after the first and repeated flights considering the timing of the examination after landing K.V. Gordienko, V.E. Novikov, G. Yu. Vassilieva	14.00-14.10	Subjective perception of time in space flights and analogs: study methods A.K. Yusupova, V.I. Gushin, D.M. Shved, N.S. Supolkina, A.I. Chekalina
14.10-14.15	Human periodontal tissues state during long-term isolation in confined habitat V.K. Ilyin, M.P. Rykova, E.N. Antropova, Z.O. Solovieva, M.A. Skedina, A.A. Kovaleva, A.M. Nosovsky	14.10-14.20	Hemodynamic Reactions Features Of A Female Body In Conditions Of "Dry" Immersion M.R. Vasina, E.S. Luchitskaya, E.S. Tomilovskaya, V.B. Rusanov			14.10-14.20	Changes in crew cohesion and habitat use during two 1-year antarctic winter-over mission M. Basner, D. F. Dinges, A. Stahn, J. Nasrini, E. Hermosillo, A.J. Ecker, M. Smith, B. Johannes, B. Healey, F.P. van den Berg, H.C. Gunga, N. Pattyn, T.M. Moore, D. Roalf, R.C. Gur
		14.20-14.30	Dynamics of human ventilation response during 21-day "dry" immersion K.S. Parshin, Yu.A. Shulagin, R.N. Zaripov, E.S. Ermolaev, A.I. Dyachenko, A.V. Suvorov	14.20-14.35	Cognitive styles & multimodal communication codes for deep space R. Toscano, A. Toscano		
14.15-14.25	Neuropsychological effects of isolation and physical exercise regimen during SIRIUS-19 V. Abeln, T. Klein, F. Möller, U. Hoffmann, J. Popova, E.A. Fomina, G. Vassilieva, S. Schneider	14.30-14.40	Manifestation of hemorrhagic syndrome after head-up tilt tests in 21-day dry immersion in the form of plasma proteome modification D.N. Kashirina, L.Kh. Pastushkova, A.G. Goncharova, I.N. Goncharov, I.V. Rukavishnikov, A.G. Brzhozovskiy, A.S. Kononikhin, M.I. Koloteva, E.S. Tomilovskaya, I.M. Larina	14.15-14.30	Effects of Thigh-cuffs on bone remodelling unbalance induced by short-term dry immersion and the associated metabolic markers M.T. Linossier, L. Peurière, M. Normand, M.P. Bareille, A. Beck, C. Bonneau, G. Gauquelin-Koch, L. Vico	14.35-14.45	Visual Dwell Time on instruments is associated with Manual Docking Performance S. Piechowski, W. Pustowalow, M. Arz, J. Rittweger, C. Mühl, E. Mulder, O. T. Wolf, J. Jordan

14.25-14.35	<p>The Effects of 120 Days Confinement During the SIRIUS Project on Physiological Kinetics and Inhibitory Control</p> <p>F. Möller, J. Koschate, M. Haeger, U. Hoffmann, E.A. Fomina, N. Didkovskaya, U. Drescher, F. Steinberg</p>	14.40-14.50	<p>Effect of 3-day "dry" immersion on the veins condition in the lower extremities of healthy women of reproductive age (NAYADA-2020)</p> <p>I.M. Vasilev, O.I. Efremova, S.G. Gavrilov, E.S. Tomilovskaya, G.Yu. Vassilieva</p>	14.30-14.45	<p>Modeling of bone organs under the influence of external force factors</p> <p>T.V. Baltina, V.V. Yaikova, A.O. Fedianin, M.E. Baltin, N.V. Kharin, O.V. Gerasimov, O.A. Sachenkov</p>	14.45-14.55	<p>Sexual wellbeing & sexual security in isolation & confinement environments</p> <p>D. Grevers, T. Amelung, M.A. Maggioni, N. Pattyn, H. - C. Gunga</p>
14.35-14.45	<p>Novel antimicrobial fleece inhibits growth of human-derived biofilm-forming Staphylococci during the SIRIUS-19 isolation</p> <p>E. Grohmann, D. Wischer, D. Schneider, A. Poehlein, O. Wagner, S. Kharin, N. Novikova, R. Haag, R. Daniel</p>	14.50-15.00	<p>Evaluation and assessment of hemodynamic regulation – Influences of the leg position during tilt test on left ventricular stroke volume</p> <p>J. Koschate, F. Möller, Z. Acar, E. Jacobi, U. Hoffmann</p>				
14.45-14.55	<p>Gender characteristics of the metabolic reactions of volunteers an experiment with 120-day isolation in a pressurized volume the background of stressful influences</p> <p>A.A. Markin, O.A. Zhuravleva, D.S. Kuzichkin, L.V. Vostrikova, I.V. Zabolotskaya, Y.V. Zhuravleva</p>	15.00-15.10	<p>Analysis of bacterial profiles of AGBRESA participants – a study concerning terrestrial astronauts under simulated microgravity</p> <p>E. Muratov, A. Himmelmann, A. Schröder, S. Koch, K. Siems, E. Mulder, C. Hellweg, P. Frings-Meuthen, C. Moissl-Eichinger, U. Rolle-Kampczyk, K. Förstner, R. Moeller</p>	14.45-15.00	<p>Thermoneutral temperature mitigates hind-limb unloading-induced bone loss by preserving energetic metabolism</p> <p>L. Peurière, C. Mastrandrea, M.-T. Linossier, M. Paul, A. Vanden-Bossche, M.-H. Lafage-Proust, L. Vico</p>	14.55-15.05	<p>MSG – Movement Space and Group health in a restricted area</p> <p>D. Michaeli, T. Carmel, M. Rozložnik, K. Brünemann</p>
14.55-15.05	<p>Sleep and autonomic nervous system during a 4-months isolation experiment</p> <p>N. Laharnar, M. Glos, A.V. Suvorov, A.V. Demin, T. Penzel, I. Fietze</p>	15.10-15.20	<p>Gravity-dependent changes in the functional state of the neuromotor apparatus of the rat calf muscles</p> <p>A.A. Ereemeev, A.O. Fedianin, T.N. Zaytseva, A.N. Babikova, T.V. Baltina</p>				
15.05-15.15	<p>Study of autonomic regulation of circulation in conditions of prolonged isolation</p> <p>A. Chernikova, O. Isaeva, O. Uss</p>		<p>Gravity and mastoid effusion</p> <p>L. Lecheler, F. Paulke, L.</p>		<p>Whole-body vibration: an 18 month countermeasure evaluation of postmenopausal women</p>		<p>Habitats in Extreme Environment and</p>

15.15-15.25	Sleep loss and high task demand lead to fast and sloppy decision-making: eye-tracking evidence from a visual search task C. Mühl, S. Benderoth, D. Aeschbach	15.20-15.25	Sonnow, U. Limper, D. Schwarz, S. Jansen. J. Tank, J. Jordan, J.P. Klusmann	15.00-15.15	postmenopausal women P. Fernandez, H. Locrelle, C. Bonneau, M. Normand, M.-H. Lafage Proust, T. Thomas, L. Vico	15.05-15.20	Habitability – A Review S. Haeuplik-Meusburger, S. Bishop
15.25-15.30	Study of the state of the auditory analyzer of the testers in the dynamics of a 4-month experiment with isolation "SIRIUS-19" I.V. Kutina	15.25-15.30	Lower body negative pressure: current updates and perspectives N. Goswami, A. Blaber, S. Du Plessis	15.15-15.30	Rat bone tissue in conditions of limited motor activity T.V. Baltina, N.N. Kuntush, A.O.Fedyanin, M.E. Baltin, N.V. Kharin, O.V. Gerasimov, O.A. Sachenkov	15.20-15.30	Assessment of the female operators' psychophysiological state under simulated microgravity using acoustic speech analysis S. Lebedeva, D. Shved, A. Savinkina
15.30-16.30	Discussion	15.30-16.30	Discussion	15.30-16.30	Discussion	15.30-16.30	Discussion
16.30-17.00	Coffee Break, Short Talks						
Hall	Mussorgsky						
17.00-18.00	Plenary session						
17.00-17.20	Developing Autonomous Medical Capabilities for Exploration Spaceflight K. Lehnhardt, B. Easter						
17.20-17.40	NASA Human Research Program – Overview of Behavioral Health and Performance Research in the SIRIUS Analog A. Whitmire, B. Gore, B. Vessey, T. Williams						
17.40-18.00	The human research program suite of integrated one-year mission experiments (CIPHER): description and integration M. Shelhamer, Ch. Oubre						
18.00-18.30	Discussion						

April 8, Thursday

08.00-09.00	Registration and Connecting participants, Technical Information						
Hall	Mussorgsky						
09.00-10.00	Plenary session						
09.00-09.20	Planetary protection in interplanetary missions: problems, challenges and solutions V.K. Ilyin						
09.20-09.40	Brain Changes in Response to Isolation and Confinement: The Need for Target-Specific Countermeasures A. Stahn						
09.40-10.00	The effect of previous spaceflight on otolith-mediated ocular counter-roll in cosmonauts after long duration spaceflight ??? F.L. Wuyts						
Hall	Mussorgsky						
10.00-10.40	Young scientists <i>Round Table</i>						
Moderator:	A. Stepanova						
10.40-11.00	Coffee Break, Short Talks						
Hall	Mussorgsky	Hall	Tolstoy	Hall	Pushkin	Hall	Chekhov
11.00-13.00	Exercise and Countermeasures in the Interplanetary Missions, Countermeasure Evaluation	11.00-13.00	Skeletal Muscle Under Conditions Of Real And Simulated Microgravity Part 1	11.00-13.00	Habitability, Nutrition and Life Support in Space Exploration	11.00-12.20	Commercial Spaceflight
Chairs:	S. Schneider/ E. Fomina R-r - S. Smoleevskiy	Chairs:	J. Rittweger/ B. Shenkman R-r S. Tyganov	Chairs:	K. Beblo-Vranesevic /V. Ilyin R-r K. Shef	Chairs:	V.S. Zander/ I. Saenko R-r A. Savinkina
11.00-11.15	Coordination among the lower limb muscles during locomotion on the passive-mode treadmill in Mars500 and in the long-term space flight A. Meigal, D. Ivanov, A. Smoleevskii, U. Monakhova, E. Fomina	11.00-11.30	Inactivity and unloading as determinants of muscle impairment in microgravity C. Reggiani	11.00-11.10	Microbial Monitoring in the EDEN ISS Greenhouse, a Mobile Test Facility in Antarctica K.Beblo-Vranesevic, J. Fahrion, P. Zabel, D. Schubert, M. Mysara, R. Van Houdt, B. Eikmanns, P. Rettberg	11.00-11.15	Space technologies in the neurorhabilitation O.Ya. Kochuneva, V.G. Mitkovsky, I.V. Saenko
				11.10-11.20	Operation of the Russian "Electron-VM" Oxygen Generation System aboard the International Space Station V.Yu. Proshkin	11.15-11.30	Linking biomedical research and technological innovation for Human health in Space and on earth – Overview of current projects and future plans in the envihab M. von der Wiesche, A. Noppe, A. Nitsche, J. Jordan
11.15-11.30	PRBS kinetics test as tool to determine effectiveness of physical training U. Hoffmann, J. Koschate, N.Yu. Lysova, L. Thieschäfer, U. Drescher, E.A. Fomina	11.30-11.50	Mitigating muscle and bone loss during spaceflight: GSK3 as a potential cellular target V. Fajardo	11.20-11.30	The optimality criteria for crop lighting inside plant growth unit for extended manned space missions A.A. Buryak, Yu.A. Berkovich, O.A. Ochkov	11.30-11.40	E-Nose technique application in the diagnosis of pneumonia T. Woehrle, S. Matzel, F. Pfeiffer, L. Kamm, D. Moser, M. Feuerecker, J. Grosser, J. Lenic, S. Zander Vanja, O. Schoele-Schulz, M. Dolch, V. Fetter, A. Choukér
				11.30-11.40	The water management on prospective space stations L.S. Bobe, A.A. Kochetkov, A.S. Tsygankov, S. Yu. Romanov, A.G. Zeleznyakov, P.O. Andreychuk, Y.E. Sinyak	11.40-11.50	Aerospace medicine in the fight against coronavirus infection I.P. Levchuk, A.A. Medenkov

11.30-11:40	<p>Changes in motor control depending on the level of physical performance in space flight N.Yu. Lysova, E.A. Fomina</p>	11.50-12.20	<p>Plantar afferent stimulation effects in postural muscle. Lessons from human and rat studies B.S. Shenkman, S.A. Tyganov</p>	11.40-11.50	<p>The rationale of the key trace contaminants list for chemicals, polluting the air of manned spacecraft A.A. Pakhomova, L.N. Mukhamedieva, D.S. Ozerov</p>	11.50-12.00	<p>Modeling of EEG signals via Partial Directed Coherence and Deep Learning for the identification of suitable artificial gravity levels in a Short Arm Human Centrifuge as part of rehabilitation of patients with neurological disorders S.N. Ketseridou , I. Machairas , C. Giantsios , C. Frantzidis, C. Plomariti , P. Kourtidou-Papadeli</p>
11:40-11.55	<p>Continuous and intermittent artificial gravity as a countermeasure to the cognitive effects of 60 days of head-down tilt bed rest</p>			12.00-12.10	<p>Biosensory medical technology for non-invasive diagnostics of oxidative stress based on the biomarkers in exhaled breath D.S. Ozerov, L.N. Moukhamedieva, J. Grosser, J. Lenic, A. Choukér, M. Dolch, Yu. Smirnov, D. Tsarkov, O. Schoele-Schulz, V. Fetter</p>	12.10-12.20	<p>Device for mechanical urine collection in women in microgravity and clinical use S.A. Lebedeva, N. Komarov, M. Stern</p>
11.55-12.05	<p>Characteristic features of human adaptation to long-term space flights on the International Space Station I.A. Nichiporuk, S.A. Chistokhodova, E.A. Fomina, T.B. Kukoba, N.Yu. Lysova, T.V. Zhuravleva, A.N. Agureev</p>			11.50-12.05	<p>Promising research areas for the operational control over the human health toxic risks in long-term manned space flights D.S. Ozerov, L.N. Mukhamedieva</p>	12.20-13.00	<p>Space Tourism</p>
12.05-12.20	<p>Possibilities for treating sensorimotor disturbances in astronauts and cosmonauts after long-duration space flights M.F. Reschke, E.S. Tomilovskaya, M.J. Rosenberg, I.S. Kofman, I.V. Rukavishnikov, V.V. Kitov, N.Yu. Osetsky, G. Clement, N. Gadd, S. Wood</p>	12.20-12.40	<p>The role of muscle tone in the genes expression regulation that control the destruction of contractile and cytoskeletal proteins of unloaded rat soleus T.L. Nemirovskaya</p>	12.05-12.20	<p>Solving nutrition Problems in Interplanetary Space Flights A.N. Agureev, K.A.Shef</p>	12.20-12.30	<p>Directions of commercialization of manned space exploration A.A. Kuritsyn, B.I. Kryuchkov, A.A. Kovinskiy</p>
12.20-12.30	<p>Peripheral Cooling in the Human Short Arm Centrifuge Can Reduce Orthostatic Intolerance O. Opatz, H-C. Gunga, N. Kagelmann</p>			12.30-12.40	<p>Governance of space tourism A. Jha , A. Kibe, A. Kumar Sinha, V.R Lalithambika</p>		
				<p>Chairs:</p> <p>A. Kuritsyn, A. Kumar R-r - N. Chub</p>			

12.30-12:40	Acute effect of hyper gravity on the neuromuscular control in drop jumps and drop landings J. Waldvogel, K. Freyler, K. Albracht, B. Stäudle, E. Monti, M. Helm, A. Gollhofer, M. Narici, R. Ritzmann	12.40-13.00	Skeletal muscle atrophy in disuse and microgravity: cellular and molecular analyses on mice and human models R. Bottinelli	12.20-12.30	Bioreactor technology as key component of providing food products astronaut in far space D.V. Maklakov, S.V. Nadezhdin	12.40-12.50	Approach for evolving medical criterions & human tolerance limits for future space tourists A. Kumar, A. Jha, A. Kibe, A.Kumar Sinha
12.40-12.50	Adenosine Biomarker Alterations during a 60 day Head Down Tilt Bed-Rest Study. Potential role of reactive sledge countermeasure. C. Nday, C. Frantzidis, P. Bamidis, C. Kourtidou-Papadeli			12.30-12.40	Mathematical prediction of gas release from polymers used onboard the manned spacecrafts P.V. Lashukov, D.S. Ozerov, N.A. Kotelnikov		
12:50-13:00	Discussion			12.40-12.50	Morphological characteristics of blood vessels and cytokine regulation of compensatory reactions in the respiratory organs of rats under the experimental fluid shift in the cranial direction M.Yu. Barantseva, L.N. Mukhamedieva, O.A. Dadasheva, D.S. Ozerov	12.50-13.00	Intellectual property commercial issues embracing the transfer of data between orbital stations: the example of the lunar gateway orbital station and the international space station J.Sandalinas
13.00-14.00	Break, Short Talks						
Place	Museum of Cosmonautics						
15.00-17.00	60th Anniversary of the First Human Space Flight						
Chairs:	R. Pischel, N. Artyukhina, M. Belakovskiy, R-r - A. Kussmaul						
15.00-15.30	Gagarin's heritage in museum collections of Russia V.L. Klimentov, M.S. Belakovskiy						
15.30-15.50	France-USSR / Russia Cooperation in the Medico-Biological Field: The Success Story in Human Space Flights and Automatic Flights Christian Lardier, Lada Lekai and Galina Fomina						
15.50-16.00	The road to cosmonautics of Military Medic I.A.Kolosov V.N. Kupriyanov						
16.00-16.15	Day of triumph of cosmonautics A.A. Medenkov, M.V. Dvornikov						
16.15-17.00	Tour						
Hall	Mussorgsky	Hall	Tolstoy	Hall	Pushkin	Hall	Chekhov
14.00-15.30	Education and Outreach in Space Sciences	14.00-15.30	The Problems of Muscle Part 2	14.00-15.30	Immunology and Biochemistry for Personalized Space Medicine	14.00-15.30	Artificial Intelligence, VR, Telemedicine in Interplanetary Missions and on the Earth
Chairs:	Ch.Rogon/ L. Buravkova R-r D. Kashirina	Chairs:	C. Reggiani/ B. Shenkman R-r S. Tyganov	Chairs:	A. Chouker/ S. Ponomarev R-r A. Pakhomova	Chairs:	A. Stahn/A. Smoleevskiy R-r D. Shved
14.00-14.15	Human spaceflight outreach – challenges and strategy for a developing nation A. Kibe, A. Jha, A. Kumar Sinha	14.00-14.20	Deregulation of costamere components in unloading muscle atrophy L. Gorza	14.00-14.10	Fibrinolytic system status after space flights D.S. Kuzichkin, A.A. Markin, O.A. Zhuravleva, Z.A. Krivitsina, T.V. Zhuravleva, L.V. Vostrikova, M.I. Koloteva, I.V. Zabolotskaya	14.00-14.10	Artificial intelligence technologies in the system of accounting for the capabilities and abilities of cosmonauts N.M. Kozlova, A.A. Medenkov

14.15-14.30	Increasing Medical Students' Accessibility to Aerospace Medicine with an Online Course T. Girgla, R. Ferguson	14.20-14.40	Inter-individual and intra-individual variation of spaceflight-induced muscle atrophy: Results from the EDOS-2 study J. Rittweger	14.10-14.20	The effect of 4-month isolation in a pressurized facility on the phenotypic characteristics of dendritic cells obtained from human peripheral blood monocytes O.V. Kutko, S.M. Shulgina, S.A. Kalinin, E.N. Antropova, M.P. Rykova, K.D. Orlova, V.A. Shmarov, D.D. Vlasova, A.A. Sadova, S.A. Ponomarev	14.10-14.20	The role of ai powered autonomous avionic systems in interplanetary spaceflight B.Bibhorr
14.30-14.45	Space Policy, Management Systems, Public Sector SXT Ariel	14.40-14.55	Regulation of skeletal muscle titin expression during unloading I.M. Vikhlyantsev	14.20-14.30	Key Predictors to Successfully Cope with the Yukon Arctic Ultra: The Longest and the Coldest Ultramarathon C. Kienast, L. Mascarell-Maricic, R. Coker, A. Schalt, M. Wypukol, N.Genov, D. Grevers, M. Joerres, R. Mole, O. Opatz, H-C. Gunga, M. Steinach	14.20-14.30	Ai based classification algorithms to identify warning signs during continuous monitoring of physiological parameters P.Biswal, S.Mishra, A. Jha, A. Kibeand, A. Kumar Sinha
14.45-15.00	Aerospace Science Popularization Education X. Huifeng			14.30-14.45	Interrelation of success in adaptation to conditions of space flights with initial biochemical and neurohormonal status of cosmonauts I. Nichiporuk, O. Zhuravleva, A. Markin, D. Kuzichkin, S. Chistokhodova, T. Zhuravleva, L. Vostrikova	14.30-14.40	Automatic primary medical diagnostics of cosmonauts on long interplanetary expeditions O.V. Perevedentsev, R.V. Chernogorov, V.M. Levanov
15.00-15.10	The relevance of Anticipation to the Searches for Alien Life in Astrobiology G. Profitiliotis	14.55-15.15	Sex-based differences in muscle response in rats exposed to micro- and partial-gravity analogs M. Mortreux	14.45-14.55	First results of the human innate immunity research during the 21-day "dry" immersion with an artificial gravity used as a countermeasure S.A. Ponomarev, S.M. Shulgina, S.A. Kalinin, E.N. Antropova, M.P. Rykova, K.D. Orlova, O.V. Kutko, V.A. Shmarov, D.D. Vlasova, A.A. Sadova	14.40-14.50	Automation of onboard crew health monitoring system using artificial intelligence algorithms S. Kumar, B. Pal Singh, A. Kibe, A. Jha, A. Kumar Sinha, V.R. Lalithambika

15.10-15.20	Education and training in space biology and medicine: the experience of Institute of Biomedical Problems of RAS E.V. Sotnezova, M.A. Levinskikh, E.V. Ezdakova, I.V. Andrianova	15.15-15.30	Sphingolipids take part in regulation of muscle plasticity during gravitational unloading I.G. Bryndina, A.V. Sekunov, V.V. Skurygin	14.55-15.10	The E-Nose Breath Gas Experiment J. Grosser, J. Lenic, J. Schmitz, V. Zander, A. Choukér, L.N. Moukhamedieva, D.S. Ozerov, M. Dolch, O. Schoele-Schulz, V. Fetter	14.50-15.00	Psychological support based on virtual reality in simulation experiments, isolation and space flights I. Rozanov , V.Gushin, O. Rumin, O. Karpova, D.M. Shved, P. Kuznecova, A.O. Savinkina, R. Abdyuhanov
						15.00-15.10	Virtual reality based simulator training for potentially dangerous and life critical emergency rehearsals P. Biswal , S. Mishra, A. Jha , A. Kibe, A. Kumar Sinha
						15.10-15.20	A vision on psychological support in future interplanetary spaceflights I. Rozanov, O. Rumin, O. Karpova, V. Gushin, D. Shved
15.30-16.30	Discussion	15.30-16.30	Discussion	15.30-16.30	Discussion	15.30-16.30	Discussion
16.30-17.00	Coffee Break, Short Talks						
Hall	Mussorgsky						
17.00-18.00	Plenary session						
17.00-17.20	Development of the design of a countermeasure system for Moon and interplanetary missions in ground and space experiments E.V. Fomina						
17.20-17.40	Standard Measures during Spaceflight G. Clement						
17.40-18.00	Past, Present, Future of Exercise and Human Performance in Space M. Downs						
18.00-18.30	Discussion						
18.30-18.50	Closing Remarks						

April 9, Friday - Business Day

10.00-13.00	18th DLR/IBMP Life Sciences Working Group Meeting (Restricted access)
Chairs:	O.I. Orlov, M.Braun
13.30-14.30	Seminar on the problems of effects of social isolation (Open access)
Chairs:	V.Gushin
15.30-20.30	NASA/IBMP Joint Working Group Meeting (Restricted access)
Chairs:	O.I. Orlov, C.Kundrot

The technical part of the Business Day is supported by the Ministry of Science and Higher Education of the Russian Federation in the frame of the project "Pavlov Center for Integrative Physiology to Medicine, High-tech Healthcare and Stress Tolerance Technologies".

Short Talks

Section	Name	Report
Muscles		
MS-01	Lvova I. D.	Transient activation of slow myosin expression after 3 days of rat hindlimb unloading is caused by calcium ions accumulation
MS-02	Zaripova K.A.	Role of ATP-dependent signalling in rat soleus muscle under hindlimb unloading
MS-03	Kalashnikov V.E.	The effect of electrical stimulation of rat hindlimb during 1-day mechanical unloading on KCC2 phosphorylation in motoneurons and anabolic and catabolic markers in soleus muscle
MS-04	I. I. Paramonova	The role of histone deacetylase 4 in the regulation of slow myosin expression at the early stage of gravitational unloading in the rat soleus muscle
MS-05	Komarova M.Y.	Fibro-adipogenic progenitor cells functions are altered during gravitation unloading
MS-06	S.V. Rozhkov	Restricted activity and protein synthesis in postural and locomotor muscles
MS-07	Belova S.P.	Restricted activity and protein synthesis in postural and locomotor muscles
MS-08	K. Sharlo	Support afferentation coregulates slow myosin expression and mitochondrial biogenesis and prevents unloading-induced fatigue in rat soleus muscle
MS-09	M.S. Laughlin, Y.A. Koryak, J. Rittweger	Changes in knee and ankle torque generation during a six-month space flight mission
MS-10	Chloë De Laet, Ludmila Kornilova, Dmitrii Glukhikh, Catho Schoenmaekers, Hamish MacDougall, Steven T. Moore, Ivan Naumov, Leander Wille, Steven Jillings, Floris Wuyts	The impact of long-duration spaceflight on the horizontal Vestibulo-Ocular Reflex (hVOR)
Countermeasure		
CT-01	Romanov P.V., Kukoba T.B., Babich D.R. Fomina E.V.	Strength-to-weight index at readaptation to Earth conditions after repeated space flights
CT-02	Koloteva M.I. and Glebova T.M.	Preliminary Results Of Studying The Human Body Physiological Activities In Simulated Microgravity With Regular Artificial Gravity Sessions On A Short-Arm Centrifuge
CT-03	Lobanov, Orlov	Mathematical modeling of the reaction of physiological systems of the body to the conditions of artificial gravity during preventive measures of adverse effects of weightlessness
CT-04	Darya Grdlichko, Elena Fomina	Development of software for evaluation of the effectiveness of countermeasures for negative effects of prolonged exposure to weightlessness
CT-05	Amanda Winters	Benefits Beyond: Mindful Missions in Autonomy Creating an adaptive experience through movement.
CT-06	Klishin G.Yu., Filatov V.N., Bogomolov A.V., Shishov A.A.	Computer system for statoergometric testing
Neuroscience		
NS-01	Selen Güney, Hüseyin Akbulut, Hasan Birol Çotuk, Adil Deniz Duru	EEG complexity features based machine learning discriminates between different mental workload states in terrestrial and lunar gravity analog
NS-02	Laurence R. Harris	The Perception of Self-Motion in Microgravity
Medical Support		
MS-01	Zh. Alimbayeva, Ch. Alimbayev, N. Bayanbay, K. Oz	Application Of A Neural Network In A Mobile Device To Monitor The State Of An Astronaut's Heart During A Flight
MS-02	Polyakov A. V., Fedyay S. O., Niyazov A. R.	Human pain threshold in space flight
MS-03	FM Shvetsky, VI Potievskaya, VS Shiryaev, MB Potievsky.	Motives for using the "ideal anesthetic" xenon
MS-04	Kulikov V. B.	Stochastic And Singular Analysis Of Fractal Signals For Space Biomedicine Systems
MS-05	Bubeev Yu.A., Ryumin O.O.	Use Of Virtual Reality Technologies In The Process Of Medical And Psychological Support Of Interplanetary Expeditions

Cardiovascular		
CV-01	F. Hoffmann, J. Hoenemann, J. Rabineau, D. Mehrkens, D.A. Gerlach, S. Moestl, B.W. Johannes, E.G. Caiani, P.-F.Migeotte, J. Jordan, J. Tank	Orthostatic tachycardia and functional cardiac response following strict head-down-tilt bedrest
CV-02	Levon R. Dilenyany, Georgy S. Belkaniya, Andrew K. Martusevich	Gravity factor in determination of hemodynamics regulatory setting in human
Neuroscience-Psy		
NS-PS-01	K. Brauns, A. Friedl-Werner, H.C. Gunga.,A.C. Stahn	Effects of two months of bed rest and antioxidant supplementation on attentional processing
NS-PS-02	A.A. Naumova, A.V. Khramtsova, A.S. Berezovskaya, E.A.	Short-term hindlimb unloading impairs dopaminergic regulation in the striatum of mice
NS-PS-03	Rabichev I.E.	Influence of gravity on organization of eye movements and visual perception
NS-PS-04	A.C. Stahn.,M. Riemer.,T. Wolbers.,D.F. Dinges.,A. Friedl-Werner., K.Brauns.,S. Besnard.,Pierre Denise.,S. Kühn., H.C. Gunga	Altered Gravity Conditions Impair Spatial Cognition
NS-PS-05	Kalinski L., El Sheikh S., Peter C., Lichterfeld Y., Weber H., Hemmersbach R., Jordan J. and Liemersdorf C.	Enhancing Synaptic Plasticity in vitro using Novel Ketamine Derivatives
Multi		
MU-01	A.K. Martusevich, A.G. Galka, E.S. Golygina, A.N. Tuzhilkin, A.S. Fedotova	Crystaloscopic test-system for cold plasma effects detection
MU-02	Amanda Winters	Mitigating the effects of Space Adaptation through Vestibular Yoga Training
Hypomagnetic		
HP-01	Pasekova O.B., Sigaleva E.E.	The Functional State Of The Human Hearing System And The Brainstem Acoustic Structures In The Simulated Hypomagnetic Field
HP-02	Medvedeva A.V., Tokmacheva E.V., Nikitina E.A., Vasilieva S.A., Stefanov V.E., Surma S.V., Shchegolev B.F., Savvateeva-Popova E.V.	Role Of Stress Impacts Of Weakened Geomagnetic Field On Drosophila Memory Formation
SANS		
SANS-01	O.M. Manko, N.Yu. Oseckij, M.A. Gracheva, S.A. Koskin, S.Yu. Golubev	Dynamics Of Visual Acute And Contrast Sensitivity In Winter Conditions At The "Vostok" Antarctic Station
SANS-02	Sh. Khan	Clinical and morphological portrait of cataract in dynamics from the UV index according to Pakistani statistics
SANS-03	S. Jillings, A.Van Ombergen, E. Tomilovskaya, A. Rumshiskaya, L. Litvinova , I. Nosikova, E. Pechenkova, I. Rukavishnikov, S. Sunaert, P.M. Parizel, V. Sinitsyn, V. Petrovichev, S. Laureys, P. zu Eulenburg, J. Sijbers, F.L. Wuyts, B. Jeurissen	Spaceflight-induced macro- and microstructural changes in the brain
SIRIUS		
SS-01	Naima Laharnar, Martin Glos, Maria Zemann, Julia Schlagintweit, Joanna Fatek, Alexander V. Suvorov, Atem V. Demin, Thomas Penzel, Ingo Fietze	Assessing and comparing effects of sleep restriction and sleep fragmentation on the autonomic nervous system – a pilot study (ANSISS)
Life Support		
LS-01	Shustrov T.L.	Simulation modeling as an important tool for the production of life-support systems
LS-02	Zaretsky B.F. Proshkin V.Y.	Planetary base automated control system
LS-03	Shef K.A., Ilyin V.K., Usanova N.A., Barantseva M.Yu.	Study of the effect of a radiation-chemical factor on the intestinal microbiome of rats
LS-04	Dymova A.A., Shef K.A., Malina O.V., Zaitsev S.N., Poddubko S.V.	Microecology of the Functional Cargo Block (FGB) under conditions of long-term operation
LS-05	Malaya Kumar Biswal M.,Noor Basanta Das.,Bamesh Na	Biological Risks and Its Implications for Crewed Interplanetary Missions
60 Anniversary		
ANN-01	Dvornikov M.V., Medenkov A.A.	Founders of biomedical training of manned space flights
ANN-02	Medenkov A.A.	Biomedical training of the first manned space flight
Radiation		
RAD-01	O.A. Ivanova, V.A. Shurshakov, S.G. Drobyshev, K.O. Inozemtsev, R.V. Tolochek	Space Radiation Factor during the Flight of Biological Satellites
RAD-02	Skorkin V.M, Lifanov M.N.	Research Of Composite Material For Improving Personal Protection Means Under Gamma Radiation

RAD-03	R. G. Hinshaw, J. Park, D. Y. Kim, R. E. Tanzi, C. A. Lemere	New Human Neural Cell Models of Low-Dose Space-Like Radiation Exposure
RAD-04	K. Fish, M. K. Khlgatian, C. Grano, M. Bissier, S. Zhang, A. Brojakowska, V. Chepurko, E. Chepurko, V. Gillespie, Y. Dai, L. Hadri, R. Kishore, and D.A. Goukassian	Longitudinal evaluation of cardiac function and structure in apoe null and C57BL/6J mice after gamma and space-type radiation exposure
Bones		
BO-01	Lukicheva N. A., Gordienko K. V., Ratushnyy A. Yu., Vassilieva G. Yu.	The content of hormones and markers of bone metabolism in the blood of rats after 7-day antiorthostatic suspension with the use of denosumab
Space Psychology		
SP-01	Lebedeva S., Shved D.	Preliminary results of a comparative study of the human psychophysiological state under simulated microgravity without countermeasures and with the use of centrifugation
Astrobiology		
AB-01	Bulat S.A., Verbenko V.N., Yaroshevich T.L., Cheptsov V.S.	Significant (in dozen times) attenuation of gamma-radiation induced dsDNA damage at -195.8 temperature exposure