



Ministry of Research and Innovation



INCAS – National Institute for Aerospace Research “Elie Carafoli”
(Under the aegis of The Romanian Academy)

International Conference of Aerospace Sciences, “AEROSPATIAL 2018” 25 – 26 October 2018, Bucharest, Romania

The conference is held under the aegis of the Ministry of Research and Innovation.

PROGRAM

Rooms	1	2	3
Time	Day 1 Thursday, 25 October 2018		
8:30 18:45	Registration		
	“Elie CARAFOLI” Amphitheatre		
9:20 9:30	Welcome by Acad. Dorel BANABIC , President of the Technical Sciences Section of the Romanian Academy		
9:30 9:40	Welcome by Minister of Research and Innovation (TBA)		
9:40 9:50	Welcome by Gen. It. (rez) Dumitru-Dorin PRUNARIU , Dr. Eng., Cosmonaut, Honorary Member of the Romanian Academy, Honorary President of the Romanian Space Agency		
9:50 10:00	Welcome and introduction by the Conference Dr. Eng. Catalin NAE , President & CEO, INCAS – National Institute for Aerospace Research “Elie Carafoli”, Bucharest, Romania		
Plenary 10:00 – 11.00	Chair: Catalin NAE (INCAS)		
10:00 10:30	“Research and design activity in Institute of Aviation performed with cooperation of Warsaw University of Technology and focused on novel aircraft configurations” Plenary Lecture speech by Prof. Zdobyslaw GORAJ Institute of Aviation, Poland		
10:30 11:00	“High-Lift Aerodynamics – another 100 years anniversary” Plenary Lecture speech by Dr. Ing. Jochen WILD German Aerospace Center DLR, Germany		
11:00 11:15	Coffee Break		
Plenary 11:15 – 13.00	Chair: Liviu COSEREANU (INCAS)		
11:15 11:45	“New radar techniques and their applications to aviation: from research to anticipation of operational needs” Plenary Lecture speech by Prof. Marc LESTURGIE ONERA, France		
11:45 12:15	“Advanced Numerical Modeling of Impact and Other High Strain Rate Phenomena in Aeronautical Structures” Plenary Lecture speech by Prof. Ivica SMOJVER University of Zagreb, Croatia		
12:15 12:45	“Various Wing Morphing Technologies Simulation and Experimental Tests Research” Plenary Lecture speech by Prof. Dr. Eng. Ruxandra Mihaela BOTEZ ETS, University of Quebec, Montreal, Canada		
12:45 13:00	Book launch: “Si noi am construit avioane IAR 93, 99, supersonic 95” – Mihail CALOMFIRESCU		
13:00 14:00	Lunch		
Plenary 14:00 – 14.30	Chair: Sorin S. RADNEF (INCAS)		
14:00 14:30	“Rotorcraft Transmissions: Improvement of traditional gearboxes, transmissions for new rotorcraft concepts, safety of drivetrains – approaches of TU Wien” Plenary lecture speech by Univ.-Prof. Dipl.-Ing. Dr.-Ing. Michael WEIGAND Vienna University of Technology, Austria		
Session 14:30 – 16:00	“Elie CARAFOLI” Amphitheatre	“Nicolae TIPEI” Amphitheatre	“Conference room”, et. 2, corp B
Session Title	Aerodynamics	Materials and Structures	Systems, Subsystems and Control in Aeronautics
Session Chair(s)	Sterian DĂNĂILĂ (UPB) Marius STOIA-DJESKA (UPB)	Victor MANOLIU (Aerospace Consulting) Adriana STEFAN (INCAS) Viorel ANGHEL (UPB)	Mircea LUPU (Transilvania University of Brasov) Laurentiu MORARU (UPB)
14:30 14:45	S1.1 Wing in Ground Effect over a Wavy Surface (3D Case) <i>Valentin BUTOESCU</i>	S4.1 Material Selection for Lightweight Design in Aerospace and Defence Engineering Workflow <i>Mariagrazia VOTTARI, Viktor POCAJT</i>	S5.1 Space Energy, a Source of Endless Energy and a Future Challenge in the Field of Space <i>Virgil STANCIU, Anna-Maria Theodora ANDREESCU</i>

14:45	15:00	S1.2 Estimation of Wind Tunnel Corrections Using Potential Models <i>Ionuț BUNESCU, Sterian DĂNĂILĂ, Mihai-Victor PRICOP, Adrian DINA</i>	S4.2 Special with Topic Additive Manufacturing <i>Oleg YENTIN</i>	S5.2 The absolute stabilization and optimal control of hydrofoil watercrafts <i>Mircea LUPU, Cristian-George CONSTANTINESCU, Gheorghe RADU</i>
15:00	15:15	S1.3 Nonlinear Lifting-Line Model using a Vector Formulation of the Unsteady Kutta-Joukowski Theorem <i>Oliviu ȘUGAR GABOR</i>	S4.3 FEM analysis of the helicopter landing gear hinge <i>Juraj HUB</i>	S5.3 Notes regarding the supply and drain pressure effects on a squeeze film damper <i>Laurențiu MORARU</i>
15:15	15:30	S1.4 The Sensitivities of the Surface Pressure for the Indirect Determination of the Mach Number and Angle of Attack of Supersonic Flows over Sharp and Multi-Slopes Wedge <i>Marius STOIA-DJESKA, Florin FRUNZULICA and Florin MINGIREANU</i>	S4.4 Lightweight vitreous carbon material: approaches to making open-pore cellular structure <i>Oleg SMORYGO, Alexander MARUKOVICH, A. VAZHNOVA, Aliaksandr ILYUSHCHANKA, Adriana STEFAN, Cristina-Elisabeta PELIN</i>	S5.4 Analysis of modern military jet trainer aircraft <i>Ilie NICOLIN, Bogdan Adrian NICOLIN</i>
15:30	15:45	S1.5 The Twisted Contact Structures in Turbulent Flows <i>Horia DUMITRESCU, Vladimir CARDOS, Radu BOGATEANU</i>	S4.5 Buckling Analysis of Straight Beams with different Boundary Conditions using an Integral Formulation of Corresponding Differential Equations <i>Viorel ANGHEL</i>	S5.5 Regulatory requirements concerning a new school and training military jet <i>Ilie NICOLIN, Bogdan Adrian NICOLIN</i>
15:45	16:00	S1.6 Using genetic algorithms to optimize aerodynamic profiles in incompressible flow <i>Adrian DINA, Sterian DĂNĂILĂ, Mihai-Victor PRICOP, Ionuț BUNESCU</i>	S4.6 Finite Element Method Structural Analysis specific approaches for computing methods of aeronautical component <i>Mircea BOCIOAGA, Ion DIMA</i>	S5.6 How does the external hypotonic environment influence the pulsating liposome activity <i>Dumitru POPESCU, Alin Gabriel POPESCU</i>
Session 16:00 – 16:15		“Elie CARAFOLI” Amphitheatre	“Nicolae TIPEI” Amphitheatre	“Conference room”, et. 2, corp B
Session Title		Aerodynamics	Materials and Structures	Workshop Project “CONTUR”
Session Chair(s)		Valentin SILIVESTRU (COMOTI) Valentin BUTOESCU (Aerospace Consulting)		Aurelian Andrei RADU (ISS) Doina NICOLAE (INOE) Ioan URSU (INCAS)
16:00	16:15	S1.7 Possible Design of a Future Electrical/BLI European Business/Passenger Aircraft with Dispersing of Shock Wave through Corona Effect <i>Constantin SANDU, Valentin SILIVESTRU, Bogdan FILIPESCU, Constantin-Radu SANDU</i>	S4.7 Temperature Effects on Damage Mechanisms of Hybrid Metal – Composite Bolted Joints Using SHM Testing Method <i>Calin-Dumitru COMAN, Ion DIMA, Ștefan HOTHAZIE, George PELIN, Tiberiu SALAORU</i>	S5.1.1 CONTUR – Status and Perspectives of a Project in Progress <i>Aurelian Andrei RADU, Sabina STEFAN, Iulia SURUCEANU, Ioan URSU</i>
16:15	16:30	Coffee Break		
Session 16:30 – 17:00		“Elie CARAFOLI” Amphitheatre	“Nicolae TIPEI” Amphitheatre	“Conference room”, et. 2, corp B
Session Title		Aerodynamics	Materials and Structures	Workshop Project “CONTUR”
Session Chair(s)			Claudia NICULESCU (INCDTP) Ștefan SOROHAN (UPB)	
16:30	16:45	S1.8 Development of a genetic algorithm for aerodynamic shape optimization <i>Lucian CONSTANTIN, Ciprian-Marius LARCO, Maria DEMȘA, Paul-Virgil ROȘU</i>	S4.8 Evaluation of the effective elastic out-of-plane properties of hexagonal honeycombs by considering the influence of curvature radius and adhesive layer <i>Ștefan SOROHAN, Dan Mihai CONSTANTINESCU, Marin SANDU, Adriana Georgeta SANDU</i>	S5.1.2 Screen induced turbulence in a low speed wind tunnel <i>Mihai Leonida NICULESCU, Ionuț BUNESCU, Dumitru PEPELEA, Mihai Victor PRICOP</i>
16:45	17:00	S1.9 Applications of the Coanda Effect in Aerospace Technology - a Review <i>Alexandru DUMITRACHE, Florin FRUNZULICA, Horia DUMITRESCU</i>	S4.9 Integrated UAS System for Intervention in Emergency Situations <i>Adrian SALISTEAN, Doina TOMA, Claudia NICULESCU, Sabina OLARU</i>	S5.1.3 Equilibrium stability of a 2-D wing with time delayed feedback control <i>Daniela ENCIU, Andrei HALANAY, Aurelian Andrei RADU, Marius STOIA-DJESKA, George TECUCEANU, Ioan URSU</i>
Session 17:00 – 17:30		“Elie CARAFOLI” Amphitheatre	“Nicolae TIPEI” Amphitheatre	“Conference room”, et. 2, corp B
Session Title		Astronautics and Astrophysics	Materials and Structures	Workshop Project “CONTUR”
Session Chair(s)		Corneliu BERBENTE (UPB)	Lorena DELEANU <i>(“Dunarea de Jos” University)</i>	
17:00	17:15	S3.1 An Interpretation of the Black Energy in Universe by Using a Hydro-Dynamical Model of the Newtonian Gravity <i>Corneliu BERBENTE, Sorin BERBENTE</i>	S4.10 Wind turbine optimization using an open-source code written in PHP <i>Felix RĂDUICĂ, Ionel SIMION</i>	S5.1.4 The Development of a Reduced Order Computational Model of an Aeroelastic Experimental Wing <i>Marius STOIA-DJESKA</i>
17:15	17:30	S3.2 Regression Rate Sensitivities for the Mathematical Modeling of Solid and Hybrid Rocket Motors <i>Marius STOIA-DJESKA and Florin MINGIREANU</i>	S4.11 Influence of the Additive Nature in Soybean Oil on Rheological Behavior <i>George Catalin CRISTEA, Alexandru RĂDULESCU, Constantin GEORGESCU, Irina RĂDULESCU, Lorena DELEANU</i>	S5.1.5 Data and Methods to Study the Clear Air Turbulence Cases in Romanian Aerial Space <i>Livius BUZDUGAN, Denisa URLEA, Sabina STEFAN, Simona ANDREI, Cristian NECULA, Aurelian Andrei RADU</i>

Session 17:30 – 18:15		“Elie CARAFOLI” Amphitheatre	“Nicolae TIPEI” Amphitheatre	“Conference room”, et. 2, corp B
Session Title		Astronautics and Astrophysics	Flight Mechanics	Workshop Project “CONTUR”
Session Chair(s)		Constantin SANDU (COMOTI)	Ion STROE (UPB) Andrei CRAIFALEANU (UPB)	
17:30	17:45	S3.3 The future of Air Space Industries based on Space Advanced Research Dark Energy power and Dark Matter pre-physical structure <i>Gheorghe RADULESCU</i>	S2.1 Validation of a helicopter turbulence model on PUMA 330 dynamics <i>Irina-Beatrice STEFANESCU, Andreea Irina AFLOARE, Achim IONITA</i>	S5.1.6 Assessment of air turbulence detection criteria using remote sensing instruments within the first CONTUR campaign <i>Livio BELEGANTE, Razvan PIRLOAGA, Bogdan ANTONESCU, Doina NICOLAE, Alexandru TILEA, Dragos ENE, Alexandru DANDOCSI, Cristian RADU, Horatiu STEFANIE, Nicolae AJTAI</i>
17:45	18:00	S3.4 Technology for Reaching of Alfa-Centaury Star by the End of This Century <i>Constantin SANDU, Valentin SILIVESTRU, Constantin-Radu SANDU</i>	S2.2 Dinamical problem for the aircraft's running on the ground <i>Sorin RADNEF</i>	S5.1.7 Developing new methodology for clear air turbulence event's detection by using a HSRL system <i>Andreea CALCAN, Livio BELEGANTE, Doina NICOLAE, Magdalena ARDELEAN, Sorin VĂJĂJAC</i>
18:00	18:15	S3.5 Using PID Controller and SDRE methods for tracking control of Spacecrafts in Closed-Rendezvous Process <i>Thein Van NGUYEN, Ana-Maria BORDEI, Achim IONITA</i>	S2.3 Horizontal Flight Dynamics Simulations Using a Simplified Airplane Model and Considering Wind Perturbation <i>Dan N. DUMITRIU, Andrei CRAIFALEANU, Ion STROE</i>	S5.1.8 BOUNDARY LAYER WIND TUNNEL FROM UTCB - a state of the art experimental infrastructure <i>Alexandru Cezar VLĂDUTȚ, Costin Ioan COȘOIU</i>
18:15	18:30	S3.6 Kinematical Structure for the Three Body problem <i>Sorin RADNEF</i>	S2.4 Performance in Transition Flight of Quad Tandem UAV <i>Andrei LUNGOCI, Achim IONITA</i>	
Session 18:30 – 18:45		“Elie CARAFOLI” Amphitheatre	“Nicolae TIPEI” Amphitheatre	“Conference room”, et. 2, corp B
Session Title		ATS and full Automation ATM	Management in Aerospace Activities	
Session Chair(s)		Sorin RADNEF (INCAS)	Dan N. DUMITRIU (SIMULTEC)	
18:30	18:45	S7.1 Optimising ATM – Modular Network Management <i>Ionuț-Cristian PEREDERIC, Ionel SIMION</i>	S8.1 The importance of pre-flight weather briefing for general aviation in Romania <i>Vlad MARAZAN</i>	
19:00		Gala Dinner – Restaurant “Turbotequila”		

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Rooms		1	2	3
Time		Day 2 Friday, 26 October 2018		
8:30	16:30	Registration		
		"Elie CARAFOLI" Amphitheatre		
9:00	10:10	The "Nicolae TIPEI" – Prize Award Ceremony		
10:10	10:50	The "Gheorghe VASILCA" – Prize Award Ceremony		
10:50	11:30	Celebrating Excellence in service of Romanian Aerospace Research, GI.FI.aer.(rez) Prof.univ. Nicolae-Florin ZĂGĂNESCU		
11:30	11:40	"Why are EO data important for the society?" Plenary Lecture speech by Dr. Bogdan ANTONESCU National R&D Institute for Optoelectronics INOE2000		
11:40	12:00	Coffee Break		
Plenary 12:00 – 13:00		Chair: Catalin NAE (INCAS)		
12:00	12:30	"(R)evolutionizing aircraft structures: Advances, trends, needs" Plenary Lecture speech by Prof. Spiros PANTELAKIS Department of Mechanical Engineering & Aeronautics University of Patras, EASN, Greece		
12:30	13:00	"Exploration of Supersonic Flow Over Flying Configurations (Part 2)" Plenary Lecture speech by Prof. Dr. Ing. Adriana NASTASE RWTH, Aachen University, Germany		
13:00	14:00	Lunch		
Session 14:00 – 15:00		"Elie CARAFOLI" Amphitheatre	"Nicolae TIPEI" Amphitheatre	"Conference room", et. 2, corp B
Session Title		Experimental Investigations in Aerospace Sciences	Materials and Structures	Management in Aerospace Activities
Session Chair(s)		Gina MANDA (<i>Victor Babes National Institute of Pathology</i>) Ionel SIMION (<i>UPB</i>)	Victor MANOLIU (<i>Aerospace Consulting</i>) Radu-Robert PITICESCU (<i>INCDMNR-IMNR</i>)	Aurelian Virgil BALUTA (<i>Spiru Haret University</i>) Constantin OLIVOTTO (<i>Aerospace Consulting</i>)
14:00	14:15	S6.1 Altered redox signalling in normal cells exposed to space-relevant radiation <i>Gina MANDA, Maria DOBRE, Ionela Victoria NEAGOE, Cristian POSTOLACHE, Marina NECHIFOR, Mariana BOBEICA, Theodor ASAVEI</i>	S4.12 New proofs concerning the selective diffusion of Cr and of spinellic solid state reactions to the adhesion of a refractory enamel to a Ni-Cr supper alloys <i>Catalin Eugen SFAT, Ion PENCEA, Victor MANOLIU, Gheorghe IONESCU, Mihai BRANZEI, Ramona Nicoleta TURCU, Mihaiță IOAN, Alexandru MATEI, Alina POPESCU-ARGES, Mihai Ovidiu COJOCARU, Mihai TĂRCOLEA</i>	S8.2 Some consideration about R&D in aviation. Type of projects. The role of the Project Manager <i>Constantin OLIVOTTO</i>
14:15	14:30	S6.2 Virtual simulation of hip joint biomechanical behavior produced by exceeding +4G-force magnitude <i>Patricia Isabela BRAILEANU, Ionel SIMION, Benyebka Bou-Saïd</i>	S4.13 Evaluation of Aerospace Materials in Relation to the Thermal Gradient <i>Victor MANOLIU, Gheorghe IONESCU, Mihail BOTAN, Radu-Robert PITICESCU, George Catalin CRISTEA</i>	S8.3 Knowledge society and aviation. Requirements for development-based management <i>Aurelian Virgil BALUTA</i>
14:30	14:45	S6.3 Validation of an acoustic tool to determine the propeller rpm <i>Nico van OOSTEN, Silviu Emil IONESCU</i>	S4.14 Vitreous enamel used as high temperature protective coatings for hot parts from the turbo engine <i>Alina DRAGOMIRESCU, Mihail BOȚAN, Victor MANOLIU, Gheorghe IONESCU, George Catalin CRISTEA, Adriana ȘTEFAN</i>	S8.4 Aviation Safety Investigations <i>Cristian TECUCEANU, Eugen SUCIU, Peter KALMUȚCHI</i>
14:45	15:00	S6.4 Towards the effects of initial grain temperature and erosive burning on the combustion of homogeneous solid rocket propellants <i>Doru SAFTA, Ioan ION</i>	S4.15 Modern Advanced Thermal Protection Systems for hot components of re-entry vehicles, rocket trust chambers and jet engines <i>Mihail BOTAN, Victor MANOLIU, Radu-Robert PITICESCU, Bogdan Stefan VASILE, Gheorghe IONESCU, Alina DRAGOMIRESCU, George Catalin CRISTEA</i>	S8.5 Topical Issues in Aircraft Health Management with Applications to Jet Engines <i>Sorin BERBENTE, Irina-Carmen ANDREI, Gabriela STROE</i>
Session 15:00 – 16:30		"Elie CARAFOLI" Amphitheatre	"Nicolae TIPEI" Amphitheatre	"Conference room", et. 2, corp B
Session Title		Experimental Investigations in Aerospace Sciences	Round table - Romanian Cluster for Earth Observation (RO-CEO)	Management in Aerospace Activities
Session Chair(s)			15.00 – 16.30 Simona ANDREI (<i>National Institute of Research and Development for Optoelectronics-INOE 2000</i>), Anca Liana COSTEA (<i>S.C. TERRASIGNA SRL</i>)	Cassandra Venera (BALAN) PIETREANU (<i>UPB</i>)

15:00	15:15	<p>S6.5</p> <p>Concurrent engineering in designing a system for sensing gas leaks in harsh space environment</p> <p><i>George SUCIU, Andrei Sorin NEAMTU, Jenica NEAMTU, Dragos OVEZEA, Maria Cristina DITU, Alexandru DROSU, Gabriel PETRESCU</i></p>	<p>EARTH OBSERVATION: How can we capitalize the resources of a research niche in everyday life?</p> <p>(identifying the best methods for improving the knowledge transfer from research to users)</p> <p><i>Doina NICOLAE, Simona ANDREI, Anca Liana COSTEA, Mircea RADULIAN, Razvan MATEESCU, Vladimir GANCZ, Mugurel BALAN, Daniela FAUR, Ovidiu Ion TRĂȘCU</i></p>	<p>S8.6</p> <p>Considerations regarding process control in aeronautical organizations in the context of improving safety and efficiency</p> <p><i>Valentin-Marian IORDACHE, Casandra Venera (BALAN) PIETREANU</i></p>
15:15	15:30	<p>S6.6</p> <p>Experimental Investigations on the Possibility to Apply the Corrugated Sheet Metal Used in the Past at Junkers Aircraft for Noise Reduction of Future European Aircraft. Other Experiments Dedicated to Noise Reduction of Future European Aircraft</p> <p><i>Constantin SANDU, Marius DEACONU, Valentin SILIVESTRU, Constantin-Radu SANDU</i></p>		<p>S8.7</p> <p>Romanian aeronautic industry evolution analysis from the structure, performance perspective and integration in the globalized structures of the aerospace industry</p> <p><i>Daniela MOCENCO</i></p>
15:30	15:45	<p>S6.7 (Poster)</p> <p>Pulse irradiation facility for simulating specific conditions at ELI-NP E5 Experimental Area</p> <p><i>Cristian POSTOLACHE, Viorel FUGARU, Mihail-Razvan IOAN, Aurelia CELAREL, Costel CENUSA</i></p>		<p>S8.8</p> <p>Numerical Simulations for Fuel Aircraft Management System</p> <p><i>Irina-Carmen ANDREI, Gabriela STROE, Sorin BERBENTE</i></p>
15:45	16:00	<p>S6.8 (Poster)</p> <p>Evaluation of Dosimetry Systems for Radiobiological Researches at ELI-NP</p> <p><i>Viorel FUGARU, Cristian POSTOLACHE, Aurelia CELAREL, Costel CENUSA, Mihail-Razvan IOAN, Catalin Stelian TUTA</i></p>		<p>S8.9</p> <p>Work Transfer in aviation, space and defense organization</p> <p><i>Manuela RUSU, Ilinca SOARE, Mihail BOTAN</i></p>
16:30		15.00 – 16.30		
		Closing Ceremony		



- "Elie CARAFOLI" Amphitheatre
- "Nicolae TIPEI" Amphitheatre
- "Conference room", et. 2, corp B