

# The 38<sup>th</sup> “Caius Iacob” Conference on Fluid Mechanics and its Technical Applications

7 – 8 November 2019, Bucharest, Romania



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## CONFERENCE PROGRAM

Thursday 07.11.2019

9. <sup>00</sup> –10. <sup>00</sup>		Registration
<b>“ELIE CARAFOLI” Amphitheatre</b>		
10. <sup>00</sup> –10. <sup>15</sup>		<b>Opening Ceremony</b> Welcome speech <b>Catalin NAE, Alexandru MOREGA, Stelian ION</b>
10. <sup>15</sup> –10. <sup>40</sup>	<b>Ana-Maria NECULĂESCU,                  Alexandru MARIN</b>	Overview on space activities development and strategic framework at INCAS
<b>Plenary Lecture</b>		
<i>Chairmans: Catalin NAE, Alexandru MOREGA</i>		
10. <sup>40</sup> –11. <sup>20</sup>	<b>Ruxandra Mihaela BOTEZ</b>	<i>Morphing Horizontal Tail Airfoil Design for the Cessna Citation X Business Aircraft</i>
11. <sup>20</sup> –11. <sup>40</sup>	<i>Coffee break</i>	
<b>COMMUNICATIONS</b>		
<b>Basic Methods in Fluid Mechanics</b>		
<b>“ELIE CARAFOLI” Amphitheatre</b>		
<i>Chairman: Valentin BUTOESCU</i>		
11. <sup>40</sup> –12. <sup>00</sup>	<b>Radu BOGATEANU,                  Vladimir CARDOS,                  Alexandru DUMITRACHE,                  Horia DUMITRESCU</b>	<i>Galilean Space - Time Structure of Structured Turbulence</i>
12. <sup>00</sup> –12. <sup>20</sup>	<b>Nicolae-Florin ZĂGĂNESCU,                  Constantin-Marcian GHEORGHE,                  Peter KALMUȚCHI</b>	<i>Original Romanian Research for a Rocket Engine with Multiple Combustion Chambers during 1940 - 1944</i>
12. <sup>20</sup> –12. <sup>40</sup>	<b>Nicolae-Florin ZĂGĂNESCU,                  Rodica ZĂGĂNESCU,                  Constantin-Marcian GHEORGHE</b>	<i>Caius Iacob – a Brilliant Mathematician Fascinated by Mechanics</i>
12. <sup>40</sup> –13. <sup>00</sup>	<b>Ilie NICOLIN,                  Bogdan Adrian NICOLIN</b>	<i>The fly-by-wire system</i>
13. <sup>00</sup> –14. <sup>00</sup>	<i>Lunch</i>	

<b>Chairman: Stefan SOROHAN</b>		
14. <sup>00</sup> –14. <sup>20</sup>	<b>Viorel ANGHEL, Ștefan SOROHAN</b>	<i>Integral Method for Flow Induced Transverse Vibrations Analysis of Flexible Pipes</i>
14. <sup>20</sup> –14. <sup>40</sup>	<b>Valentin BUTOESCU</b>	<i>The Influence of a Wavy Water Surface on a Wing Flying over It</i>
14. <sup>40</sup> –15. <sup>00</sup>	<b>Marius STOIA-DJESKA, Florin MINGIREANU</b>	<i>Sensitivity Analysis on the Aerodynamic Loads and Aeroelastic Stability of Slender Launchers and Missiles Using a Reduced Order Model</i>
15. <sup>00</sup> –15. <sup>20</sup>	<b>Adriana NASTASE</b>	<i>Exploration of Supersonic Flow (Part 3)</i>
15. <sup>20</sup> –15. <sup>40</sup>	<i>Coffee break</i>	
<b>COMMUNICATIONS</b> <span style="float: right;">THURSDAY, 7 November, 2019</span>		
<b>Mathematical Modeling</b>		
<b>“ELIE CARAFOLI” Amphitheatre</b>		
<b>Chairman: Ion STROE, Florin MINGIREANU</b>		
15. <sup>40</sup> –16. <sup>00</sup>	<b>Andrei Filip COJOCARU, Alina Georgia IONITA, Silvia NECHITA, Ionut GROZEA, Davide BONETTI, Paulo ROSA, Ana - Maria NECULAESCU, Alexandru MARIN</b>	<i>Ascent trajectory optimization for two micro-launcher concepts</i>
16. <sup>00</sup> –16. <sup>20</sup>	<b>Corneliu BERBENTE, Sorin BERBENTE, Marius BREBENEL</b>	<i>Light, Gravity, Expansion, Relativity, Black Holes and Black Energy- Considerations at the Scale of Universe</i>
16. <sup>20</sup> –16. <sup>40</sup>	<b>Jean VANDERDONCKT, Sandra SOARES-FRAZÃO, Yves ZECH, Santiago VILLARREAL-NARVAEZ</b>	<i>Measuring Particle Flow by Voronoi diagrams</i>
16. <sup>40</sup> –17. <sup>00</sup>	<b>Florin FRUNZULICĂ, Alexandru DUMITRACHE</b>	<i>A brief review on Coanda effect in technical applications</i>
17. <sup>00</sup> –17. <sup>20</sup>	<b>Roxana Alexandra PETRE, Ion STROE, Andrei CRAIFALEANU</b>	<i>Rotation-Rotation Mechanism moving with respect to a plane</i>
17. <sup>20</sup> –17. <sup>40</sup>	<b>Marius BREBENEL</b>	<i>An Analytical Method for Simulation of Centrifugal Compressors</i>
18. <sup>00</sup>	<b>Dinner – restaurant “Turbotequila”</b>	

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Thursday 07.11.2019

COMMUNICATIONS		
Equations of Mathematical Physics & Dynamical Systems		
“NICOLAE TIPEI” Amphitheatre		
Chairman: Gelu PASA		
11. <sup>40</sup> –12. <sup>00</sup>	Cecil P. GRÜNFELD	<i>On a Nonlinear Evolution Model in Abstract State Space</i>
12. <sup>00</sup> –12. <sup>20</sup>	Gabriela MARINOSCHI	<i>Controllability in minimum time of diffusion in porous media</i>
12. <sup>20</sup> –12. <sup>40</sup>	Ruxandra STAVRE	<i>Asymptotic analysis of a viscous fluid layer separated by a thin stiff stratified elastic plate</i>
12. <sup>40</sup> –13. <sup>00</sup>	Isabelle GRUAIS, Dan POLIȘEVSCI, Alina ȘTEFAN	<i>Two-temperature homogenized eigenfunctions of conduction through domains with jump interfaces</i>
13. <sup>00</sup> –14. <sup>00</sup>	<i>Lunch</i>	
Chairman: Ruxandra STAVRE		
14. <sup>00</sup> –14. <sup>20</sup>	Stelian ION, Dorin MARINESCU, Stefan-Gicu CRUCEANU	<i>Mathematical modeling of water circulation in the continuum soil-plant-atmosphere</i>
14. <sup>20</sup> –14. <sup>40</sup>	Oana LUPASCU-STAMATE	<i>Boundary variation method for the generalized Cheeger problem</i>
14. <sup>40</sup> –15. <sup>00</sup>	Gelu I. PASA	<i>On the stability of two Oldroyd-B fluids displacing in a Hele-Shaw cell</i>
15. <sup>00</sup> –15. <sup>20</sup>	Adrian BURGHIU, Andrei LUNGOCI	<i>Three axis attitude control for an orbital space vehicle</i>
15. <sup>20</sup> –15. <sup>40</sup>	<i>Coffee break</i>	

COMMUNICATIONS		THURSDAY, 7 November, 2019
Mathematical Modeling		
<b>“NICOLAE TIPEI” Amphitheatre</b>		
<i>Chairman: Dan POLIȘEVSKI</i>		
15. <sup>40</sup> –16. <sup>00</sup>	Alexandru Mihail MOREGA, Alin Alexandru DOBRE, Mihaela MOREGA, Roxana Maria BAEROV	<i>Numerical Modeling of Magnetic Hyperthermia</i>
16. <sup>00</sup> –16. <sup>20</sup>	Dumitru POPESCU	<i>The working of the pulsatory liposome in a closed enclosure</i>
16. <sup>20</sup> –16. <sup>40</sup>	Claudiu PATRASCU, Ioana RASUCEANU, Corneliu BALAN	<i>Advancing drops on curved and flat surfaces</i>
16. <sup>40</sup> –17. <sup>00</sup>	Oana Daciana BOTTA, Istvan MAGOȘ, Corneliu BĂLAN	<i>Experimental study on the formation and break-up of fluid bubbles</i>
17. <sup>00</sup> –17. <sup>20</sup>	Mihai-Vlăduț HOTHAZIE, Georgiana ICHIM, Mihai-Victor PRICOP	<i>Development and validation of constraints handling in a Differential Evolution optimizer</i>
18. <sup>00</sup>	<b>Dinner – restaurant “Turbotequila”</b>	

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Thursday 07.11.2019

COMMUNICATIONS		
Workshop Project “CONTUR”		
“NICOLAE CĂMĂRĂȘESCU” Room		
Co-chairmans: Aurelian Andrei RADU, Ioan URSU		
11. <sup>40</sup> –12. <sup>00</sup>	Octavian Paul BUGEAC, Sabina ȘTEFAN	Satellite imagery identification of turbulence potential associated with breaking waves
12. <sup>00</sup> –12. <sup>20</sup>	Livius BUZDUGAN, Cristian NECULA, Aurelian Andrei RADU, Sabina ȘTEFAN	Role of vertical wind shear and deformation in Clear Air Turbulence within the Romanian Airspace
12. <sup>20</sup> –12. <sup>40</sup>	Razvan PIRLOAGA, Livio BELEGANTE, Dragos ENE, Cristian RADU, Doina NICOLAE, Aurelian Andrei RADU	Optimization of the High Spectral Resolution Lidar (HSRL) system for airborne operation
12. <sup>40</sup> –13. <sup>00</sup>	Aurelian Andrei RADU, Iulia SURUCEANU	AEOLUS satellite data – a source of information for atmospheric turbulence studies
13. <sup>00</sup> –14. <sup>00</sup>	<i>Lunch</i>	
Co-chairmans: Aurelian Andrei RADU, Ioan URSU		
14. <sup>00</sup> –14. <sup>20</sup>	Nicolae AJTAI, Livio BELEGANTE, Horațiu ȘTEFĂNIE, Alexandru MEREUȚĂ, Andrei RADOVICI, Camelia BOTEZAN	Preliminary calibration and validation activities for the Aeolus L2A products in Romania
14. <sup>20</sup> –14. <sup>40</sup>	Iulia SURUCEANU, Aurelian Andrei RADU	EDR - a parameter used for the study of aviation turbulence
14. <sup>40</sup> –15. <sup>00</sup>	Ioan URSU, Adrian TOADER, George TECUCEANU, Daniela ENCIU, Laura TIRLE,	About active control synthesis for wing model in aerodynamic tunnel

**CONFERENCE PROGRAM**

	Radu DIACONU, Minodor ARGHIR, Dragos Daniel ION-GUTA, Andrei HALANAY	
15. <sup>00</sup> –15. <sup>20</sup>	Laurentiu MORARU, Marius STOIA-DJESKA	<i>Notes Regarding the Dynamics of an Airplane subjected to Vertical Gusts</i>
15. <sup>20</sup> –15. <sup>40</sup>	<b>Coffee break</b>	
15. <sup>40</sup> –16. <sup>00</sup>	Romulus LUNGU, Mihai LUNGU, Claudia EFRIM	<i>The influence of atmospheric turbulences on airplanes and passengers</i>
16. <sup>00</sup> –16. <sup>20</sup>	Marius STOIA-DJESKA, Laurentiu MORARU, Cristian-Emil CONSTANTINESCU	<i>A reduced order model for aeroelastic analysis of a wing with controls in turbulent flows</i>
16. <sup>20</sup> –16. <sup>40</sup>	Marius STOIA-DJESKA	<i>Evaluation of different atmospheric turbulence models for aerodynamic and aeroelastic analysis of a wing</i>
18. <sup>00</sup>	<b>Dinner - restaurant "Turbotequila"</b>	

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Friday 08.11.2019

### “ELIE CARAFOLI” Amphitheatre

09. <sup>00</sup> –09. <sup>30</sup>	Registration	
09. <sup>30</sup> –11. <sup>00</sup>	The “Nicolae TIPEI” Prize Award Ceremony The “Gheorghe VASILCA” Prize Award Ceremony	
11. <sup>00</sup> –11. <sup>20</sup>	<i>Coffee break</i>	
<b>COMMUNICATIONS</b> <span style="float: right;">FRIDAY, 8 November, 2019</span>		
<b>Technical Applications</b>		
<b>“ELIE CARAFOLI” Amphitheatre</b>		
<i>Co-chairmans: Stelian ION, Ioan URSU</i>		
11. <sup>20</sup> –11. <sup>40</sup>	Marius-Alexandru VOICU, Ion FUIOREA	<i>Identification of the critical parts for a medium courier turboprop aircraft</i>
11. <sup>40</sup> –12. <sup>00</sup>	Marius Alexandru PANAIT, Victor Mihai PRICOP	<i>Accelerometer driven wind tunnel model pitch angle measurement</i>
12. <sup>00</sup> –12. <sup>20</sup>	George SUCIU, Denis-Nicoleta BOTEZATU, Cristiana ISTRATE, Gabriela IOSIF	<i>E-STAR framework for concurrent engineering</i>
12. <sup>20</sup> –12. <sup>40</sup>	Liviu DRĂGUȘ, Ionuț CIOBANU, Adrian ALEXEI, Mariana BARBARESSO, Larisa-Cristiana LUPU	<i>Estimation of mechanical characteristics for structural components from composite material</i>
12. <sup>40</sup> –13. <sup>00</sup>	Irina-Carmen ANDREI, Gabriela-Liliana STROE, Sorin BERBENTE, Sorin STEFANESCU	<i>Issues on Fuels, Chemical Properties in Numerical Simulations and Safe Operation of the Jet Engines</i>
13. <sup>00</sup> –14. <sup>00</sup>	<i>Lunch</i>	
14. <sup>00</sup> –14. <sup>15</sup>	Closing Ceremony	