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MAY 2024

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## Conference Guide

# SCIENTIFIC RESEARCH AND EDUCATION IN THE AIR FORCE

The 25<sup>th</sup> Edition

**AFASES 2024**



**The 25<sup>th</sup> Edition of the International  
Conference AFASES, 2024**

*Scientific Research and  
Education in the Air Force*

**Conference Guide**



# Conference Agenda

## **Friday, 24 May 2024**

08.00 – 09.00 Welcoming and registration

09.00 – 10.30 AFASES Official Opening.

Plenary Session: Keynote speakers

Photo session

11.00 – 15.30 Paper presentations on panels

19.00 – 24.00 AFASES official dinner

## **Saturday, 25 May 2024**

Sightseeing activities



# The Session Panels

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<b>1. MILITARY SCIENCES</b>	<b>F-E3.11</b>	<b>10</b>
<b>2. ENGINEERING SCIENCES</b>	<b>F-E3.11</b>	<b>12</b>
<b>3. MANAGEMENT AND SOCIAL- HUMANITIES</b>	<b>F-E3.11</b>	<b>14</b>
<b>4. AERONAUTICAL AND ATMOSPHERIC SCIENCES</b>	<b>F-E3.4</b>	<b>16</b>
<b>5. WORKSHOP PROIECT ACCuReSy</b>	<b>F-E3.4</b>	<b>20</b>

# International Scientific Committee

## Scientific Director of the Conference:

**Marius ȘERBESZKI**, PhD

Rector of 'Henri Coandă' Air Force Academy, Brasov, Romania

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**Simona ANDREI**, PhD

National Institute for Research and Development in Optoelectronics INOE 2000, Romania

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"Henri Coandă" Air Force Academy, Brasov, Romania

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"Henri Coandă" Air Force Academy, Brasov, Romania

**Aura CODREANU**, PhD

Regional Department of Defense Resources Management Studies, Brasov, Romania

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"Vasil Levski" National Military University, Bulgaria

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**Mihaela GURANDA**, PhD

"Henri Coandă" Air Force Academy, Brasov, Romania

**Mariusz KOZIOL**, PhD

War Studies University, Poland

**Ioanna LEKEA**, PhD  
Hellenic Air Force Academy, Greece

**Tudorel LEHACI**, PhD  
“Carol I” National Defense University, Bucharest, Romania

**Adrian LESENCIUC**, PhD  
“Henri Coandă” Air Force Academy, Brasov, Romania

**Doru LUCULESCU**, PhD  
“Henri Coandă” Air Force Academy, Brasov, Romania

**Iryna LYSYCHKINA**, PhD  
Department of Philology, Translation and Strategic Communications, National  
Academy of the National Guard of Ukraine

**Ecaterina-Liliana MIRON**, PhD  
“Henri Coandă” Air Force Academy, Brasov, Romania

**Victor PRICOP**, PhD  
National Institute for Aerospace Research "Elie Carafoli", Bucharest, Romania

**Daniela ROȘCA**, PhD  
The University of Craiova, Romania

**Andrzej SOBON**, PhD  
War Studies University, Poland

**Daniel-Cornel ȘTEFĂNESCU**, PhD  
“Henri Coandă” Air Force Academy, Brasov, Romania

**Alexandru TUDOSIE**, PhD  
University of Craiova, Romania



# Organizing Committee

## Chair:

Lect **Adrian PITICAR**, PhD  
Vice-Rector for Science, “Henri Coandă” Air Force Academy, Brasov, Romania

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Assoc Prof Eng. **Ecaterina-Liliana MIRON**, PhD  
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LTC Lect **Cristian DRAGOMIR**, PhD  
LTC Assist Prof Eng **Cornel ARAMĂ**, PhD  
Lect **Mihaela GURANDA**, PhD

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Eng **Daniela OBREJA**  
Inf **Adrian ROTARU**  
Inf **Adina DOBRIȚOIU**

# Keynote Speakers

**Daniela DRAGOMIR, PhD**

Executive Agency for Higher Education, Research,  
Development and Innovation Funding, Bucharest, Romania

Col. Assoc. Prof. Eng. **Laurian GHERMAN, PhD**

“Henri Coandă” Air Force Academy, Brasov, Romania

Eng. **Sorin DINEA, PhD**

“Henri Coanda” NGO, Bucharest, Romania

Senior Researcher Eng. **Victor PRICOP, PhD**

National Institute for Aerospace Research "Elie Carafoli",  
Bucharest, Romania

# 1. Military Sciences

Conference ROOM F-E3.11

## Moderator:

**Daniel-Cornel ȘTEFĂNESCU, PhD**

“Henri Coandă” Air Force Academy, Brașov, Romania

1. *The Role of Cognitive Load in Decision-Making Process for Pilots in High Intensity Environments*, **George Adrian AIONESEI, Sorin PARASCHIV**, Boboc Air Force Base, Buzău, Romania
2. *China – The International Actor Preparing to Rule the World*, **Vlăduț BERBUNSCHI**, “Henri Coandă” Air Force Academy, Brașov, Romania
3. *Considerations Regarding the Development of a Hierarchy of Special Operations Forces within Air Forces Using Multicriteria Analysis*, **Mihai-Dan DEAȘ\***, **Florian RÂPAN\*\***,  
\*”Henri Coandă” Air Force Academy, Brașov, Romania,  
\*\*”Dimitrie Cantemir” University, Bucharest, Romania
4. *Technological Advancements in Warfare: Ethical and Operational Challenges of AI and Autonomous Systems*, **Cristina Elena VASILACHE\***, **Loreta Daniela MAZILU\*\***,  
“Henri Coandă” Air Force Academy, Brașov, Romania,  
“Transilvania” University of Brașov, Romania
5. *The Impact of a Military Conflict with the Potential for Escalation on the Populations of Neighboring States. Case Study: The War in Ukraine*, **Flavius Cristian MĂRCĂU**,  
”Constantin Brâncuși” University, Târgu Jiu, Romania

6. *Theoretical Approaches Regarding Supply within the Military Organization*, **Marius MILANDRU\***, **Mihai-Bogdan ALEXANDRESCU\*\***, \**“Henri Coandă” Air Force Academy, Braşov, Romania*, \*\**“Spiru Haret” University, Bucharest, Romania*

## 2. Engineering Sciences

Conference ROOM F-E3.11

### Moderators:

**Ionică CÎRCIU**, PhD

“Henri Coandă” Air Force Academy, Braşov, Romania

1. *Investigation of the Acoustic Performance of Perforated Steel Insulation Panel Using Experimental and Numerical Methods*, **Alina-Elena ADETU**, **Cătălin ADETU**, **Daniel BOSNICEANU**, **Mihaela-Cristiana BADEA**, Romanian Air Force, Bucharest, Romania
2. *An Analysis of the Implications of Inserting Availability into the Matrix of the Viability Factors for the Military Technical Systems*, **Cornel ARAMĂ**, “Henri Coandă” Air Force Academy, Braşov, Romania
3. *Leveraging e-Learning for Enhanced Information Resource Management in Air Surveillance Officer Education and Radar System Maintenance*, **Liviu GĂINĂ\***, **Alexandru DINU\*\***,  
\*“Henri Coandă” Air Force Academy, Braşov, Romania,  
\*\*“Transilvania” University of Braşov, Romania
4. *Aspects Regarding Artificial Intelligence Use in Military and Engineering Sciences Aircraft Propulsion*, **Mihai Alin MECLEA**, **Alexandru Silviu GOGA**, **Mircea BOŞCOIANU**, “Transilvania” University of Braşov, Romania

5. *State-of-the-art Analysis: Controller Placement in 5G Secure Network*, **Maria-Daniela TACHE (UNGUREANU)\***, **Ovidiu PĂSCUȚOIU\*\***, \*National University of Science and Technology Polytechnica of Bucharest, Romania, \*\*“Henri Coandă” Air Force Academy, Braşov, Romania

# 3. Management and Socio-Humanities

Conference ROOM F-E3.11

**Moderator:**

**Cristian DRAGOMIR, PhD**

“Henri Coandă” Air Force Academy, Braşov, Romania

1. *Optimizing Communication in Operating Theaters: Applications of Psycholinguistics in the Efficient Transmission of Messages*, **Irina Mihaela BAKHAYA**, “Alexandru Ioan Cuza” Police Academy Bucharest, Romania
2. *The Language Barrier and its Impact on Operational Efficiency: The Role of Psycholinguistics and Overcoming Communication Obstacles in Multicultural Military Environments*, **Irina Mihaela BAKHAYA**, “Alexandru Ioan Cuza” Police Academy Bucharest, Romania
3. *Strategic Leadership in an Era of Competition*, **Diana CHIŞ-MANOLACHE**, ”Carol I” National Defence University, Bucharest, Romania
4. *The Relationship between Managerial Entrenchment, Ownership Structure, and Diversifying Acquisitions in China, Providing Empirical Evidence*, **Souhayla ELBEHI\***, **Ali AHMADI\*\***,  
\*Faculty of Economics and Management of Sfax, Tunisia,  
\*\*Higher Institute of Business Administration, University of Gafsa, Tunisia

5. *Resilience in a Military Context: Psychological Strategies for Improving Performance in Crisis Situations*, **Razvan GĂTEJ**, “Alexandru Ioan Cuza” Police Academy Bucharest, Romania
6. *The Impact of Combat Stress on Tactical Decisions: A Psychological Analysis of Behavior in Theaters of Operations*, **Razvan GĂTEJ**, “Alexandru Ioan Cuza” Police Academy Bucharest, Romania
7. *Considerations Regarding the Evaluation of Human Resources in Aeronautics*, **Mihaela GURANDA**, ”Henri Coandă” Air Force Academy, Braşov, Romania
8. *The Human Factor in the Aeronautical Environment*, **Mihaela GURANDA**, ”Henri Coandă” Air Force Academy, Braşov, Romania
9. *Extrapolating Security: When Everything is Security Nothing is Security*, **Ioana LEUCEA**, **Ecaterina DRĂGHICI**, “Mihai Viteazul” National Intelligence Academy, Bucharest, Romania
10. *Curious Insight on Society*, **Marian-Sebastian PARASCA**, “Alexandru Ioan Cuza” Police Academy, Bucharest, Romania



# 4. Aeronautical and Atmospheric Sciences

Conference ROOM F-E3.4

## Moderators:

**Mihai-Victor PRICOP**, PhD

National Institute for Aerospace Research "Elie Carafoli", Bucharest, Romania

**Vasile PRISACARIU**, PhD

"Henri Coandă" Air Force Academy, Braşov, Romania

1. *Generative Design Strategies for Lightweight Internal Structure in Tandem Wing Small UAVs*, **Constantin Mihaita AGAPIE**, **George-Razvan BUICAN**, "Transilvania" University of Braşov, Romania
2. *Design Considerations for Tandem Wing Configurations in Small Unmanned Aerial Vehicles*, **Constantin Mihaita AGAPIE**, **George-Razvan BUICAN**, **Marian Sebastian ZAHARIA**, "Transilvania" University of Braşov, Romania
3. *Comparative Analysis for Performance Prediction of IAR 99 Aircraft Propulsion Systems*, **Irina ANDREI**, National Institute for Aerospace Research "Elie Carafoli" – INCAS, Bucharest, Romania
4. *Experimental Investigation on Roll Damping Moment Using Both Forced and Free Rotation Methods*, **Ionuţ BUNESCU<sup>\*,\*\*</sup>**, **Mihai-Vlăduţ HOTHAZIE<sup>\*,\*\*</sup>**, **Mihăiţă GILBERT STOICAN<sup>\*</sup>**, **Mihai-Victor PRICOP<sup>\*</sup>**, \*National Institute for Aerospace Research "Elie Carafoli", Bucharest, Romania,

\*\*Politehnica University of Bucharest, Faculty of Aerospace Engineering, Romania

5. *Web-Based Platforms Supporting the Climate Adaptation at Local Scale in Braşov Metropolitan Area*, **Sorin CHEVAL\***, **Alexandru DUMITRESCU\***, **Vasile CRĂCIUNESCU\***, **Mihai Cristian ADAMESCU\*\***, \*National Meteorological Administration, Bucharest, Romania, \*\*University of Bucharest, Romania
6. *Flexibility, Effectiveness of Intelligent Weapons and Ammunition of Integrated Air Systems Specific to the Romanian Air Force*, **Ionică CÎRCIU**, **Eduard MIHAI**, “Henri Coanda” Air Force Academy, Braşov, Romania
7. *Considerations on the History and Evolution of Parachutes*, **Mihai-Dan DEAŞ**, **Alexandru COROIAN**, ”Henri Coandă” Air Force Academy, Braşov, Romania
8. *Considerations Regarding Optimizing the Education Process in UAS Specialty at the "Henri Coandă" Air Force Academy and the "Aurel Vlaicu" Air Base Training and Aeronautical Personnel Development*, **Paula DIACONASU**, Boboc Air Force Base, Buzău, Romania
9. *Mobile Simple Counter Drones System*, **Sorin DINEA**, “Henri Coanda” NGO, Bucharest, Romania
10. *Henri Coandă: Supersonic Flight in Full Atmosphere*, **Sorin DINEA**, “Henri Coandă” NGO, Bucharest, Romania
11. *Exploring Spanwise Effects in Transonic Optimization Processes*, **Mihai-Vlăduţ HOTHAZIE\*\***, **Daniel-Eugeniu CRUNȚEANU\***, **Mihai Victor PRICOP\*\***, **Ionut BUNESCU\*\***, **Mihăiță-Gilbert STOICAN\*\***, National Institute for Aerospace Research "Elie Carafoli" – INCAS,

Bucharest, Romania, <sup>\*\*</sup>”Politehnica” University of Bucharest,  
Faculty of Aerospace Engineering, Romania

12. *Influence of Meteorological Conditions on the 1941 and 1944-1945 Campaigns of Romanian Military Aviation*, **Ana-Maria IAURUM<sup>\*</sup>**, **Jănel TĂNASE<sup>\*\*</sup>**, **Sorin CHEVAL<sup>\*\*\*</sup>**, <sup>\*</sup>”Babeş-Bolyai” University, Cluj-Napoca, Romania, <sup>\*\*</sup>”Henri Coandă” Air Force Academy, Braşov, Romania, <sup>\*\*\*</sup>National Meteorological Administration, Bucharest, Romania
13. *AI4AGRI - Romanian Excellence Center in Artificial Intelligence on Earth Observation Data for Agriculture*, **Mihai IVANOVICI**, “Transilvania” University of Braşov, Romania
14. *The Impact of Weather on Flight Performance and Aviation Communication*, **Andrei-Mihai LUCHIAN<sup>\*</sup>**, **Vasile PRISACARIU<sup>\*\*</sup>**, <sup>\*</sup>Special Telecommunications Service, Bucharest, Romania, <sup>\*\*</sup>”Henri Coandă” Air Force Academy, Braşov, Romania
15. *Designing a Jets Rig Specifically for Wind Tunnel Testing of an Active Launch Escape Abort System Model*, **Mihăiţă Gilbert STOICAN**, **Marina ANDREI**, **Tiberiu SALAORU**, **Ionuţ BUNESCU**, **Mihai-Vlăduţ HOTHASIE**, **Mihai Victor PRICOP**, National Institute for Aerospace Research "Elie Carafoli" – INCAS, Bucharest, Romania
16. *Theoretical Considerations Regarding Applications of Energy Harvesting in Airplanes*, **Loreta-Daniela MAZILU<sup>\*</sup>**, **Daniel Tudor COTFAS<sup>\*</sup>**, **Petru Adrian COTFAS<sup>\*</sup>**, **Cristina-Elena VASILACHE<sup>\*\*</sup>**, <sup>\*</sup>”Transilvania” University of Braşov, Romania, <sup>\*\*</sup>”Henri Coandă” Air Force Academy, Braşov, Romania
17. *Disruptive Technologies in War & War Disruption of Programs*, **Mihai-Victor PRICOP**, National Institute for Aerospace Research “Elie Carafoli”, Bucharest, Romania

18. *Optimization of Gravity Turn to Prescribed Circular Orbit by Modulation of Thrust for SSTO, Using Differential Evolution*, **Mihai-Victor PRICOP<sup>\*,\*\*</sup>**, **Ionuț BUNESCU<sup>\*,\*\*</sup>**, **Mihai-Vlăduț HOTHAZIE<sup>\*\*</sup>**, **Mihăiță GILBERT STOICAN<sup>\*</sup>**,  
<sup>\*</sup>National Institute for Aerospace Research "Elie Carafoli", Bucharest, Romania, <sup>\*\*</sup>"Politehnica" University of Bucharest, Faculty of Aerospace Engineering, Romania
19. *Preliminary CAD Design of Aircraft Using XFLR5*, **Vasile PRISACARIU**, **Mihai EDUARD**, "Henri Coanda" Air Force Academy, Brașov, Romania
20. *The Influence of Meteorological Conditions on UASS' Flight Performance*, **Alexandru TUDOR**, **Andra-Maria CERNAVSCHI**, **Vasile PRISACARIU**, "Henri Coanda" Air Force Academy, Brașov, Romania
21. *Sustainable Management of the Water Resources Under Climate Change in Brasov Metropolitan Area*, **Nicu TUDOSE<sup>\*</sup>**, **Mirabela MARIN<sup>\*</sup>**, **Cezar UNGUREAN<sup>\*</sup>**, **Sorin CHEVAL<sup>\*\*</sup>**,  
<sup>\*</sup>National Institute for Research and Development in Forestry (INCDS) "Marin Drăcea", Romania, <sup>\*\*</sup>National Meteorological Administration, Bucharest, Romania
22. *Research on Autonomous Multi-Role Rapid Intervention Systems*, **Marius TUTUNEA**, "Henri Coanda" Air Force Academy, Brașov, Romania
23. *The Role of Artificial Intelligence in Shaping the Future of Aviation Safety Culture*, **Marius-Alexandru VOICU**, "Henri Coanda" Air Force Academy, Brașov, Romania

# 5. Workshop proiect ACCuReSy - Advanced Research on Convective Clouds using Remote Sensing Instruments from new Exploratory Platforms

Conference ROOM F-E3.4

1. *ACCuReSy Project - New Approaches in Studying Convective Environments in Romania and Lessons Learned*, **Simona ANDREI\***, **Mariana ADAM\***, **Răzvan PÎRLOAGĂ\*\***, **VASILE PRISACARIU\*\*\***, **Adrian PITICAR\*\*\***, \*National Institute of Research and Development for Optoelectronics, Măgurele, Romania, \*\*University of Bucharest, Faculty of Physics, Măgurele, Romania, \*\*\*“Henri Coandă” Air Force Academy, Braşov, Romania
2. *Monitoring the Atmospheric Features at MARS During Convective Seasons 2022 and 2023*, **Simona ANDREI\***, **Mariana ADAM\***, **Răzvan PÎRLOAGĂ\*\***, \*National Institute of Research and Development for Optoelectronics, Măgurele, Romania, \*\*University of Bucharest, Faculty of Physics, Măgurele, Romania
3. *Spatio-temporal Distribution of Convective Events in Romania*, **Adrian PITICAR\***, **Simona ANDREI\*\***, **Alexandru TUDOR\***, \* “Henri Coandă” Air Force Academy, Braşov, Romania, \*\*National Institute of Research and Development for Optoelectronics, Măgurele, Romania

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