



**IACAS**

The **59<sup>th</sup>**  
Israel Annual Conference  
on Aerospace Sciences

**P R O G R A M**



## **The 59<sup>th</sup> Israel Annual Conference on Aerospace Sciences**

### **Partners**

Faculty of Aerospace Engineering, Technion

Ben Gurion University of the Negev

Civil Aviation Authority of Israel

Directorate of Defense R&D, IMoD

Elbit Systems

Elbit Systems - IMI Division

Israeli Air Force

Israel Aerospace Industries

Israel Society of Aeronautics & Astronautics

Israeli CFD Center

Rafael Advanced Defense Systems

Tel Aviv University

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## **Conference & Marcom Coordinator**

Seginer Vered, Technion

# Program for Wednesday, March 6, 2019

## Dan Panorama Hotel, Tel Aviv

### Registration 08:00-09:00

#### Welcoming Address

Hall A

09:00-09:05

Prof. Emeritus Moti Karpel

Chair, 59<sup>th</sup> IACAS  
Organizing Committee

#### WeKLPL

Hall A

#### Keynote Lecture (Plenary Session)

Chair: Karpel, Moti

Technion

09:05-09:50

WeKLPL.1

#### *Innovation Beyond the Horizon*

Dr. Amiram Appelbaum

Israel Innovation Authority (IIA)

#### WePI1PL

Hall A

#### Plenary Lecture I - The 26<sup>th</sup> Theodore von Kármán Lecture (Plenary Session)

Chair: Givoli, Dan

Technion

09:50-10:40

WePI1PL.1

#### *The Beauty of Turbulence and Transitions in Reactive Flows*

Prof. Elaine Oran

University of Maryland

### Coffee Break

10:40-11:00

#### WePI2PL

Hall A

#### Plenary Lecture II (Plenary Session)

Chair: Karpel, Moti

Technion

11:00-11:50

WePI2PL.1

#### *Industrial Shape Optimization Applications Using Adjoints and HPC: A 25-Year Perspective*

Prof. Juan J. Alonso

Stanford University

<b>WePI3PL</b>	Hall A
<b>Plenary Lecture III (Plenary Session)</b>	
Chair: Oshman, Yaakov	Technion - Israel Institute of Technology
11:50-12:40	WePI3PL.1
<i>Scientific Applications of Global Navigation Satellite Systems</i>	
Prof. Penina Axelrad	University of Colorado Boulder

**Lunch**  
**12:40-14:00**

<b>WeL1T1</b>	Hall A
<b>Systems Engineering and Autonomous Systems</b> <b>Supported by the Gordon Center for Systems Engineering</b> (Regular Session)	
Chair: Glaser, Itshak	Technion
Co-Chair: Cohen, Agnes	Elbit Systems - IMI Div.
14:00-14:25	WeL1T1.1
<i>Advanced Low Cost Launching System Design – a System Engineering Approach</i>	
Glaser, Itshak	Technion
Cohen, Agnes	Elbit Systems - IMI Div.
Hargash, Asaf	Elbit Systems - IMI Div.
14:25-14:50	WeL1T1.2
<i>Rafazon - Simulation and Optimization of a Quadcopters Fleet for Real-Time Delivery</i>	
Rokita, Tomer	Rafael / Technion
Ross, Chana	Rafael
14:50-15:15	WeL1T1.3
<i>Area Coverage – a Swarm Based Approach</i>	
Rappel, Ori	Technion
Ben-Asher, Joseph Z.	Technion
15:15-15:40	WeL1T1.4
<i>Investigation of Mobile Robot Time Optimal Trajectories under State Dependent Constraints</i>	
Khmelniker, Polina	Technion
Rimon, Elon	Technion
Ben-Asher, Joseph Z.	Technion

<b>WeL1T2</b>	Hall B
<b>Guidance (Regular Session)</b>	
Chair: Shima, Tal	Technion
14:00-14:25	WeL1T2.1
<i>Defender Assisted Evasion Maneuvers</i>	
Anderson, Roger	Air Force Institute of Technology
Pachter, Meir	Air Force Institute of Technology/ENG
Murphey, Robert	Air Force Research Lab
14:25-14:50	WeL1T2.2
<i>Augmented Proportional Navigation Guidance with Cooperative Collision Avoidance</i>	
Jha, Bhargav	Technion
Tsalik, Ronny	Technion
Weiss, Martin	Technion
Shima, Tal	Technion
14:50-15:15	WeL1T2.3
<i>A Generic Guidance Design Method Based on Minimum Quadratic Guidance Effort</i>	
Weiss, Martin	Technion
Shima, Tal	Technion
15:15-15:40	WeL1T2.4
<i>Least-Square Filtering of Homing Sensor Data with Bounded Measurement Errors</i>	
Weiss, Martin	Technion
Shima, Tal	Technion
Rusnak, Ilan	Rafael
15:40-16:05	WeL1T2.5
<i>Impact Angle Guidance Using MinMax Approach</i>	
Rubinsky, Sergey	Elbit Systems
Gutman, Shaul	Technion

<b>WeL1T3</b>	Hall C
<b>Navigation and Space Systems (Regular Session)</b>	
Chair: Choukroun, Daniel	Ben-Gurion University of the Negev
14:00-14:25	WeL1T3.1
<i>Optimization of Satellite Constellations in Low Earth Orbit for Regional Positioning</i>	
Shtark, Tomer	Technion
Gurfil, Pini	Technion
14:25-14:50	WeL1T3.2
<i>Performance Evaluation of a Regional Navigation Satellite System in Low Earth Orbit</i>	
Shtark, Tomer	Technion
Gurfil, Pini	Technion
14:50-15:15	WeL1T3.3
<i>Comparison of Two Nonlinear Filters for Orbit Determination Using Angles-Only Data</i>	
Psiaki, Mark L.	Cornell University
15:15-15:40	WeL1T3.4
<i>A Novel Constrained Quaternion Filter</i>	
Choukroun, Daniel	Ben-Gurion University of the Negev
Tamir, Uri	Ben-Gurion University of the Negev
15:40-16:05	WeL1T3.5
<i>SpaceIL Mission to the Moon: Navigation Approach for the Landing</i>	
Levy, Agnes	SpaceIL
Rubanenko, Ariel	SpaceIL
Priel, Aviv	SpaceIL
Gazit, Itzik	SpaceIL

<b>WeL1T4</b>	Hall D
<b>Fluid Mechanics and Aeroacoustics (Regular Session)</b>	
Chair: Amitay, Miki	Rensselaer Polytechnic Institute
14:00-14:25	WeL1T4.1
<i>High-Order Thermal Effects in Oscillatory Couette Flow of a Rarefied Gas</i>	
Ben-Ami, Yaron	Technion
Manela, Avshalom	Technion
14:25-14:50	WeL1T4.2
<i>Spinning to Noise: Broadband Propeller Acoustics</i>	
Silver, Jonathan	Israel Aerospace Industries
14:50-15:15	WeL1T4.3
<i>Subsonic Jet Noise Predictions</i>	
Weidenfeld, Michael	Rafael
15:15-15:40	WeL1T4.4
<i>Collaborative Investigation of 3-D Separation on Low Aspect Ratio Finite Span Wings</i>	
Hayostek, Shelby	Rensselaer Polytechnic Institute
Amitay, Miki	Rensselaer Polytechnic Institute
Zhang, Kai	Florida State University
Kunihiko, Taira	Florida State University
He, Wei	University of Liverpool
Burtsev, Anton	University of Liverpool
Theofilis, Vassilis	University of Liverpool
15:40-16:05	WeL1T4.5
<i>Nanoswimmers in the ERF Environment</i>	
Nagler, Jacob	Tel Aviv University and Tomer



<b>WeL1T5</b>	Hall E
<b>Rocket Propulsion (Regular Session)</b>	
Chair: Natan, Benny	Technion
14:00-14:25	WeL1T5.1
<i>Investigation of ABS-Paraffin Based 3D Printed Hybrid Rocket Fuels</i>	
Bresler, Jacob	Technion
Natan, Benny	Technion
14:25-14:50	WeL1T5.2
<i>Investigation of the Influence of Graphite Additives on the Fuel Regression Rate in Hybrid Propulsion</i>	
Elanjickal, Silky	Technion
Sá, Francisco	Technion
Gany, Alon	Technion
14:50-15:15	WeL1T5.3
<i>Electromechanical System for Solid Rocket Motor Thrust Modulation</i>	
Zamir, Yossi	Technion
Safron, Michael	Rafael
Albagli, David	Rafael
Gany, Alon	Technion
15:15-15:40	WeL1T5.4
<i>Post-Firing Analysis of Solid Rocket Motor Internal Insulation Using 3D Scanning &amp; Modeling Technique</i>	
Shilav, Ramin	Rafael
15:40-16:05	WeL1T5.5
<i>Development of Numerical Modeling Methods and Experimental Capabilities for Carbon and EPDM Erosion Prediction for Solid Rocket Motors</i>	
Sudman, Yonadav	Tomer
Oren, Michal	Tomer
Kigli, Avital	Tomer
Peles, Oren	Tomer
Gendler, Dmitri	Tomer
Wirzberger, Hod	Tomer

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*Technion Aerial Systems 2018 Development of an Autonomous Unmanned Aerial System for AUVSI SUAS Competition*

Bruner, Janna	Technion
Tzror, Imri	Technion
Joseph, Daniel	Technion
Greenberg, Sigalit	Technion
Grinfeld-Faru, Oz	Technion
Shulman, Sergey	Technion
Smadar, Tom	Technion
Danan, Gil	Technion
Soesan, Ron	Technion
Shukrun, Osher	Technion
Shay, Alon	Technion
Tohar, Gil	Technion
Meir, Noam	Technion
Di Porto, Simone	Technion
Shamir, Omer	Technion
Barel, Avraham	Technion
Joels, Tsoof	Technion
Liani, Bar	Technion
Luden, Gabriel	Technion
Zur, Matan	Technion
Sarfaty, Shahar	Technion
Daniel, Aviram	Technion
Gilad, Ron	Technion
Wilmowski, Omer	Technion
Machulsky, Maria	Technion
Peretz, Tamar	Technion
Kazaz, Nitzan	Technion
Eizenberg, Idan	Technion
Herscovici, Zvi	Technion
Reuven, Kfir	Technion
Artzi, Dror	Technion
Gutnik, Yevgeni	Technion
Erez, Johanan	Technion
Zivan, Lior	Israel Aerospace Industries
Gazit, Hovav	Technion

14:20-14:40	WeL1T6.2
<i>A New Modified Diesel Cycle for Small Aircraft Operating at High Altitude Conditions – a Numerical Simulation</i>	
Karsenty, Kadmiel	Technion
Sher, Eran	Technion
14:40-15:00	WeL1T6.3
<i>DriveSat – Vacuum Arc Thruster &amp; Hard Disc Drive Reaction Wheel Satellite</i>	
Alperovitz, Tal	Technion
Sdvijkov, Yevgenii	Technion
Norber, Itai	Technion
Leiberman, Daniel	Technion
Malihi, Aviv	Technion
Levy, Nadav	Technion
Herscovitz, Jacob	Technion
15:00-15:20	WeL1T6.4
<i>FireFly - Autonomous Drone Swarm</i>	
Nemirovsky, Meir	Technion
Alfandari, Liran	Technion
Mudrik, Liraz	Technion
Markovich, Daniel	Technion
Ben Baruch, Nir	Technion
Vaisler, Dana	Technion
Yavnai, Arik	AI-MA Applied Intelligent Machines
15:20-15:40	WeL1T6.5
<i>Formula Technion Aerodynamics Team 2018</i>	
Shtainman, Alex	Technion
Goldenshluger, Eli	Technion
Cohen, Yedidya Shlomo	Technion
Barbul, Ilya	Technion
Rozin, Natali	Technion
Rafailov Lilach	Technion
Nahman, Daniel	Technion
Haslavsky, Yael	Technion
Kootzenko, Michael	Technion

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15:40-16:00	WeL1T6.6
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*Vito – Long Distance Drone*

Klimovitsky, Ofir	Technion
Drellich, Nathaniel	Technion
Ipenberg, Yuval	Technion
Jacob, Limor	Technion
Magor, Netanel	Technion
Mazor, Jonathan	Technion
Yitzhack, Matan	Technion
Kadushin, Isaac	Technion

**Coffee Break**

**16:05-16:25**

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<b>WeL2T1</b>	Hall A
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**Aeroelasticity I (Regular Session)**

Chair: Iovnovich, Michael	Israeli Air Force
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16:25-16:50	WeL2T1.1
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*Flutter Mechanisms Characterization Using Distributed Aeroelastic Energy Analysis*

Karniel, Yaara	Israeli Air Force
Kariv, Daniel	Technion
Iovnovich, Michael	Israeli Air Force

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16:50-17:15	WeL2T1.2
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*Effect of External Stores Aerodynamics on Analytic Fighter Aircraft Flutter Predictions: Evaluation of a Superposition Modeling Approach*

Iovnovich, Michael	Israeli Air Force
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17:15-17:40	WeL2T1.3
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*Kriging-Based Gust Response Analysis Methodology at High Angles of Attack*

Mallik, Wrik	Technion
Raveh, Daniella	Technion

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17:40-18:05	WeL2T1.4
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*Dynamic Gust Response of Very Flexible Aircraft Using Segmental Modes*

Gov, Favel	Rafael
Karpel, Moti	Technion

<b>WeL2T2</b>		Hall B
<b>Guidance and Control</b> (Regular Session)		
Chair: Idan, Moshe	Technion	
16:25-16:50	WeL2T2.1	
<i>A General Attainable-Set Model Predictive Control Scheme</i>		
Gomes, Rui	Porto University	
Pereira, Fernando Lobo	Porto University	
16:50-17:15	WeL2T2.2	
<i>Estimation-Based Guidance and Its Use in a Staggered-Engagement Stochastic Cooperative Interception</i>		
Mudrik, Liraz	Technion	
Oshman, Yaakov	Technion	
17:15-17:40	WeL2T2.3	
<i>Performance Analysis of a Preview-Control-Based Terrain-Following Approach</i>		
Livshitz, Arseny	Technion	
Idan, Moshe	Technion	
17:40-18:05	WeL2T2.4	
<i>Motion Planning of Thrust Vectored Airship Using Spherical Expansion Based Algorithm with Adaptive Fuzzy Control</i>		
Mishra, Amardeep	Indian Institute of Technology Madras	
Zinage, Vrushabh	Indian Institute of Technology Madras	
<b>WeL2T3</b>		Hall C
<b>Flow Control</b> (Regular Session)		
Chair: Jacobi, Ian	Technion	
16:25-16:50	WeL2T3.1	
<i>Control of Turbulent Separation from an Inclined Cylinder of Finite Aspect Ratio, Thus Affecting Its Yaw</i>		
Kalyankar, Harshad	University of Arizona	
Taubert, Lutz	University of Arizona	
Wyganski, Israel	University of Arizona	
16:50-17:15	WeL2T3.2	
<i>Active Flow Control Implementation for Helicopter External Stores Support System Drag Reduction</i>		
Drori, Ofek	Tel Aviv University	
Yaniv, Ariel	Tel Aviv University	
Seifert, Avi	Tel Aviv University	

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17:15-17:40 WeL2T3.3

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*Control of Aerodynamic Loads on Rotorcraft Blades  
Using Trailing Edge Fluidic Actuation*

Tan, Yuehan	Georgia Institute of Technology
Glezer, Ari	Georgia Institute of Technology
Patterson, Ryan	University of Michigan
Friedmann, Peretz	University of Michigan

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17:40-18:05 WeL2T3.4

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*Take-Off Performance Enhancement Via Stall Control of  
a Full-Scale Aircraft Tail*

Hasin, David	Technion
Greenblatt, David	Technion
Keisar, David	Technion

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**WeL2T4** Hall D

**Aerospace Design, Manufacturing, and Maintenance  
(Regular Session)**

Chair: Shtayman, Zvi	Israel Aerospace Industries
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16:25-16:50 WeL2T4.1

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*3D Printing in China's Aerospace Industries*

Niu, Xiaodong	Shantou University
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16:50-17:15 WeL2T4.2

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*In-Situ Monitoring of Joint Integrity for Condition Based  
Monitoring of Avionic Components*

Lopatin, Craig	Technion
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17:15-17:40 WeL2T4.3

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*Transport Aircraft Human Errors Quantification*

Berlowitz, Ilan	Israel Aerospace Industries
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<b>WeL2T6</b>	Hall F
<b>Students Competition II (Regular Session)</b>	
Chair: Yudilevitch, Gil	Technion

16:25-16:45

WeL2T6.1

*TITANS - Technion Institute of Technology AutoNomous Submarine Design*

Tambour, Dor	Technion
Karsenty, Kadmiel	Technion
Kharakh, Felix	Technion
Oiknine, Ofek	Technion
Bar David, Yoav	Technion
Levy, Ran	Technion
Zhakov, Arie	Technion
Kagan, Guy	Technion

16:45-17:05

WeL2T6.2

*Project Front Viewer*

Naor, Alon	Technion
Zaporozhets, Ivan	Technion
Yaari, Neta	Technion
Galmidi, Nofar	Technion
Taran, Nuriel	Technion
Naveh, Oded	Technion

<b>WeL2T5</b>	Hall E
<b>General Meeting of  the Israel Society of Aeronautics &amp; Astronautics</b> 17:00-18:00	

Dekel Hall	
<b>Festive Dinner</b> (with vouchers only) <b>18:15-20:45</b>	

# Program for Thursday March 7, 2019

## The Technion, Haifa

### Registration 08:30-09:00

#### Opening Address Churchill Auditorium

09:00-09:05

Prof. Itzchak Frankel

Dean, Faculty of Aerospace  
Engineering, Technion

#### Welcoming Address Churchill Auditorium

09:05-09:10

Prof. Adam Shwartz

Senior Executive Vice  
President, Technion

#### ThPI1PL Churchill Auditorium

##### Plenary Lecture IV (Plenary Session)

Chair: Gany, Alon

Technion

09:10-10:00

ThPI1PL.1

##### *Aviation's Third Revolution: Challenges and Opportunities*

Dr. Susan Ying

International Council of  
Aeronautical Sciences

### Coffee Break 10:00-10:30

#### ThPI2PL Churchill Auditorium

##### Plenary Lecture V (Plenary Session)

Chair: Blasberger, Avi

Israel Space Agency

10:30-11:20

ThPI2PL.1

##### *The Role of Established Space Industry in a New Space Environment*

Mr. Opher Doron

Israel Aerospace Industries



<b>ThPI3PL</b>	Churchill Auditorium
<b>Plenary Lecture VI (Plenary Session)</b>	
Chair: Raveh, Daniella	Technion
11:20-12:10	ThPI3PL.1
<i>Very Flexible Aircraft: Performance Promises and Aeroelastic Challenges</i>	
Prof. Carlos Cesnik	University of Michigan

**Lunch**  
**12:10-13:30**

<b>ThL1T1</b>	Room 149
<b>Combustion and Reactive Flows (Regular Session)</b>	
Chair: Sher, Eran	Technion
13:30-13:55	ThL1T1.1
<i>Flash Boiling Fuel Atomization: Theoretical Criteria</i>	
Moshkovich, Yahav	Technion
Levy, Yeshayahou	Technion
Sher, Eran	Technion
13:55-14:20	ThL1T1.2
<i>On the Operation of a Generic Vaporizer under Steady-State Conditions</i>	
Levy, Yeshayahou	Technion
Erenburg, Vladimir	Technion
Sherbaum, Valery	Technion
Gaissinski, Igor	Technion
Ovcharenko, Vitaly	Technion
Kam, Ori	Tel Aviv University
14:20-14:45	ThL1T1.3
<i>Polydisperse Spray Stagnation Point Ignition: Analytical and Numerical Studies</i>	
Greenberg, J. Barry	Technion
Katz, Gershon	Technion
14:45-15:10	ThL1T1.4
<i>Evolution of Spherical Flame through a Mist of Water-In-Fuel Droplets</i>	
Greenberg, J. Barry	Technion
Weinberg, Noam	Technion

<b>ThL1T2</b>	Room 150
<b>Fluid Dynamics (Regular Session)</b>	
Chair: Igra, Dan	Rafael
13:30-13:55	ThL1T2.1
<i>Experimental Study of the Transonic Flow of a Jet-Fighter Weapon Bay with a Store Model</i>	
Ben-Gida, Hadar	Israeli Air Force
Poplingher, Lior	Israeli Air Force
Goldman, Yoel	Israeli Air Force
Adar, Motti	Israeli Air Force
13:55-14:20	ThL1T2.2
<i>The Stationary Leading-Edge Vortex Over a High Aspect Ratio Wing</i>	
Ben-Gida, Hadar	Technion
Gurka, Roi	Coastal Carolina University
Weihs, Daniel	Technion
14:20-14:45	ThL1T2.3
<i>Validation of the Extensions Implemented to the Simple Analytical Model for Waverider Design</i>	
Igra, Dan	Rafael
14:45-15:10	ThL1T2.4
<i>A New Aerodynamic Model of Horizontal Axis Wind Turbines</i>	
Ognev, Valentin	Technion
Rosen, Aviv	Technion
15:10-15:35	ThL1T2.5
<i>Aerodynamic Design and Evaluation of a Type of Hypersonic Long-Range Civil Vehicle</i>	
Qian, Zhansen	AVIC Aerodynamics Research Institute

<b>ThL1T3</b>	Room 641 (Lady Davis)
<b>Industrial Projects (Regular Session)</b>	
Chair: Cohen, Agnes	Elbit Systems - IMI Div.
Co-Chair: Shakked, Tal	Israel Aerospace Industries
13:30-13:50	ThL1T3.1
<i>GMM Development : Challenges and Successes</i>	
Zeldin, Oran	Elbit Systems - IMI Div.
Heller, Carmit	Elbit Systems - IMI Div.
Cohen, Agnes	Elbit Systems - IMI Div.

13:50-14:10	ThL1T3.2
<i>Modeling Flight Test Unexpected Phenomena with the Use of Neural Networks</i>	
Grinfeld, Natan	Elbit Systems - IMI Div.
Cohen, Agnes	Elbit Systems - IMI Div.
Yaesh, Isaac	Elbit Systems - IMI Div.
14:10-14:30	ThL1T3.3
<i>SpaceIL – Landing the First Israeli Spacecraft on the Moon</i>	
Anteby, Ido	SpaceIL
14:30-14:50	ThL1T3.4
<i>A Novel Approach for an Autonomous Weighing System through Fuselage Interface Loads</i>	
Shachar, Oren	Elbit Systems
Balter, Jonathan	Elbit Systems
Bar-On, Ron	Elbit Systems
Ben-Ari, Meir	Elbit Systems
14:50-15:10	ThL1T3.5
<i>Conformal Airborne Early Warning System for the Italian Air Force (IT-CAEW) Program</i>	
Melumad, Addie	Israel Aerospace Industries/ELTA
15:10-15:30	ThL1T3.6
<i>Determination of a Towed Body Configuration with a Dynamical-Aerodynamical Simulation</i>	
Pevzner, Pavel	Rafael
Vahav-Dalal, Michal	Rafael
Djerassi, Shlomo	Rafael
<b>ThL1T4</b>	Room 240
<b>Autonomous Systems (Regular Session)</b>	
Chair: Indelman, Vadim	Technion
13:30-13:55	ThL1T4.1
<i>Introducing Incremental eXpectation to Belief Space Planning</i>	
Farhi, Elad I.	Technion
Indelman, Vadim	Technion
13:55-14:20	ThL1T4.2
<i>A Projected Lloyd's Algorithm for Coverage Control Problems</i>	
Palti, Yoav	Technion
Zelazo, Daniel	Technion

14:20-14:45	ThL1T4.3
<i>Control under Constraints of Tethered UAVs Via Interpolating Control</i>	
Glick, Tal	Ben-Gurion University of the Negev
Arogeti, Shai	Ben-Gurion University of the Negev
14:45-15:10	ThL1T4.4
<i>Formations Using Finite-Time Heterogeneous Cyclic Pursuit</i>	
Mukherjee, Dwaipayan	Indian Institute of Technology Bombay
Kumar, Shashi Ranjan	Indian Institute of Technology Bombay
<b>ThL1T5</b>	Room 241
<b>Navigation (Regular Session)</b>	
Chair: Boyarski, Shmuel	Elbit Systems - IMI Div.
Co-Chair: Klein, Itzik	Technion
13:30-13:55	ThL1T5.1
<i>Comparative Performance of Two Methods for Visual Terrain Assisted Navigation</i>	
Rotstein, Hector P.	Technion
Rivlin, Ehud	Technion
Geva, Amir	Technion
13:55-14:20	ThL1T5.2
<i>Navigation and Ionosphere Characterization Using High-Frequency Signals – Models, Solution Concepts, and a Performance Analysis</i>	
Baumgarten, Yoav	Rafael
Psiaki, Mark L.	Cornell University
14:20-14:45	ThL1T5.3
<i>Enhanced Estimation of Position Aided INS Utilizing Trajectory History</i>	
Klein, Itzik	Technion
Lipman, Yeshaya	Rafael
Vaknin, Eliav	Rafael
14:45-15:10	ThL1T5.4
<i>Flight-Direction Aiding for a Low-Cost INS</i>	
Boyarski, Shmuel	Elbit Systems - IMI Div.
Heller, Carmit	Elbit Systems - IMI Div.
Wiesen, Eldar	Elbit Systems - IMI Div.
Cohen, Agnes	Elbit Systems - IMI Div.

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15:10-15:35 ThL1T5.5

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*Velocity Aided Leveling Loop Utilizing Low Cost Inertial Measurement Unit*

Avital, Irina Elbit Systems - IMI Div.  
Yaesh, Isaac Elbit Systems - IMI Div.  
Stoica, Adrian-Mihail University Politehnica of  
Bucharest

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**ThL1T6** Room 165 (Library)  
**Aerospace Materials, Fatigue and Analysis (Regular Session)**

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Chair: Abramovich, Haim Technion

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13:30-13:55 ThL1T6.1

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*Long-Wave Magnetomechanical Instabilities in fiber-Reinforced Magnetoactive Composites*

Goshkoderia, Artemii Technion  
Rudykh, Stephan Massachusetts Institute of  
Technology (MIT)

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13:55-14:20 ThL1T6.2

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*Examination of Algorithms for Prediction of Very High Cycle Fatigue Life*

Buimovich, Yael Israel Aerospace Industries  
Binyamin, Tom Tel Aviv University

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14:20-14:45 ThL1T6.3

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*Numerical Investigation of the Effect of Secondary Bending in Hard-Point Joints*

Magidish, Orel Israel Aerospace Industries  
Freed, Yuval Israel Aerospace Industries  
Elmalich, Dvir Israel Aerospace Industries  
Mayo, Alon Israel Aerospace Industries  
Sagi-Machnes, Lior Tel-Aviv University, Technion

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14:45-15:10 ThL1T6.4

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*Widespread Fatigue Damage Assessment – What Can Possibly Go Wrong?*

Freed, Yuval Israel Aerospace Industries

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15:10-15:35 ThL1T6.5

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*Weibull or Log-Normal Distributions to Characterize Fatigue Life Scatter - Are We Closer to a Solution?*

Brot, Abraham A. Brot, Engineering Consultant

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**Coffee Break**  
**15:35-16:00**

<b>ThL2T1</b>	Room 149
<b>Air/Water Breathing Propulsion (Regular Session)</b>	
Chair: Leitner, Amiram	Rafael
16:00-16:25	ThL2T1.1
<i>Exploration of Spark Discharge Characteristics for Ignition of Scramjet Engines</i>	
Lefkowitz, Joseph	Technion
Ombrello, Timothy	Air Force Research Laboratory
Hammack, Stephen	Air Force Research Laboratory
Carter, Campbell	Air Force Research Laboratory
Busby, Kenneth	Universal Technologies Corporation
16:25-16:50	ThL2T1.2
<i>Theoretical Performance of Water-Augmented Underwater Rocket</i>	
Eisen, Nachum	Technion
Gany, Alon	Technion
16:50-17:15	ThL2T1.3
<i>Evaluation of Fuels and Oxidizers for Pulse Detonation Rocket Engines</i>	
Siles, Flavio	Technion
Kadosh, Hertzal	Technion
Schwartz, Tal	University of British Columbia
Michaels, Dan	Technion
<b>ThL2T2</b>	Room 150
<b>Computational Fluid Dynamics (Regular Session)</b>	
Chair: Levy, Yuval	Israeli CFD Center
16:00-16:25	ThL2T2.1
<i>Hybrid RANS/LES Simulation of Combustion in a Model Scramjet</i>	
Wasserman, Mark	Israeli CFD Center
Levy, Yuval	Israeli CFD Center
Mograbi, Elaad	Rafael
Shmueli, Havatzelet	Rafael
16:25-16:50	ThL2T2.2
<i>Detached-Eddy Simulations of the Transonic Flow of a Generic Jet-Fighter Weapon Bay with a Store</i>	
Ben-Gida, Hadar	Israeli Air Force
Poplingher, Lior	Israeli Air Force
Adar, Motti	Israeli Air Force

16:50-17:15	ThL2T2.3
<i>Hybrid Simulations of Various Levels for the Prediction of Flared Afterbodies Drag</i>	
Arad, Eran	Rafael
17:15-17:35	ThL2T2.4
<i>Drag Reduction Control in Turbulent Channel by Spanwise Traveling Wave of Wall Blowing and Suction</i>	
Huang, Yi	Tsinghua University

<b>ThL2T4</b>	Room 240
<b>Estimation (Regular Session)</b>	

Chair: Rusnak, Ilan	Rafael
16:00-16:25	ThL2T4.1
<i>Smoothing of Linear Scalar Systems with Cauchy Distributed Noises</i>	
Idan, Moshe	Technion
Speyer, Jason L.	University of California at Los Angeles

16:25-16:50	ThL2T4.2
<i>Issues in Design and Selection of State Dependent Coefficient Form for Efficient Estimation</i>	
Rusnak, Ilan	Rafael
Peled-Eitan, Liat	Rafael

16:50-17:15	ThL2T4.3
<i>An Improved Algorithm for Universal Sensor Registration</i>	
Sigalov, Daniel	Technion
Gal, Aharon	Rafael
Vigdor, Boaz	Rafael

17:15-17:35	ThL2T4.4
<i>Optimal State Estimation of Maneuvering Target with Limited Acceleration</i>	
Rusnak, Ilan	Rafael

<b>ThL2T5</b>	Room 241
<b>Astrodynamics and Space Systems (Regular Session)</b>	

Chair: Mishne, David	Technion
16:00-16:25	ThL2T5.1
<i>Spacecraft Attitude Dynamics During Orbit Correction Maneuvers under Multi-Tank Sloshing Disturbances</i>	
Leiter, Noam	SpaceLL

16:25-16:50	ThL2T5.2
<i>Liquid Lithium-Hydrogen Rocket Engine with Regeneration of Components</i>	
Blumkin, Lev	Inventor
16:50-17:15	ThL2T5.3
<i>A Scenario Based On-Board Software and Testing Environment for Satellites</i>	
Bar-Sinai, Michael	Ben-Gurion University of the Negev
Elyasaf, Achiya	Ben-Gurion University of the Negev
Sadon, Aviran	Ben-Gurion University of the Negev
Weiss, Gera	Ben-Gurion University of the Negev
17:15-17:35	ThL2T5.4
<i>Rendezvous Maneuver of Satellites Using Solar Radiation Pressure</i>	
Mishne, David	Technion
<b>ThL2T6</b>	Room 165 (Library)
<b>Aeroelasticity II (Regular Session)</b>	
Chair: Raveh, Daniella	Technion
16:00-16:25	ThL2T6.1
<i>Dynamic Response of an Elastic Aircraft to Store Ejection</i>	
Kariv, Daniel	Technion
Raveh, Daniella	Technion
16:25-16:50	ThL2T6.2
<i>Modal Rotations: A Modal-Based Method for Large Structural Deformations</i>	
Drachinsky, Ariel	Rafael
Raveh, Daniella	Technion
16:50-17:15	ThL2T6.3
<i>Aeroservoelastic Stability Analysis, Tests and Design Aspects Using Parametric Flutter Margins</i>	
Roizner, Federico	Technion
Karpel, Moti	Technion



**Thank you for attending  
the 59<sup>th</sup> IACAS.**

**We hope you found it both  
interesting and enjoyable.**

**See you next year at  
The 60<sup>th</sup>  
Israel Annual Conference on  
Aerospace Sciences !**

