

# H<sup>2019</sup>-SPACE

5th INTERNATIONAL CONFERENCE  
ON RESEARCH, TECHNOLOGY AND EDUCATION OF SPACE

**February 27-28, 2019, Budapest, Hungary**  
[space.bme.hu](http://space.bme.hu)

*In this list, the affiliation of the first author is listed.*

## February 27, Wednesday

Location: Building K, first floor, Saloon room

*Műgyetem rakpart 3., Budapest, H-1111, Building K, first floor, "Díszterem"*

### 14:00 Greetings

László Bacsárdi, Vice President of MANT, co-chair of the Organizing Committee

### 14:05 Discussion: From Moon landing to Mars landing (*in Hungarian*)

Participants:

Iván Almár, Honorary President, Hungarian Astronautical Society

András Sik, Vice President, Hungarian Astronautical Society

Moderator:

Előd Both, President, Hungarian Astronautical Society

*Session Chair: Kálmán Kovács*

### 15:00 Opening ceremony

János Józsa, Rector, Budapest University of Technology and Economics

Orsolya Ferencz, Ministerial Commissioner, Ministry of Foreign Affairs and Trade

Előd Both, President, Hungarian Astronautical Society

Kálmán Kovács, President, BME Space Forum

### 15:15 Keynote presentation

*On the Hydrologic Impacts of Climate Change*

János Józsa, Rector, Budapest University of Technology and Economics

### 15:40 One minute madness (Session Science and Technology III and Education and Outreach II)

*Poster authors presents their work in 1 minute*

### 16:00 Poster session with coffee break

**16:45-18:30: Technical presentations – Session Science and Technology I**

*Radio interferometry for the study of Jupiter's icy moons*

Sándor Frey

Konkoly Observatory, MTA Research Centre for Astronomy and Earth Sciences, Hungary

*Determination of 3D surface deformation for the 2018 Oaxaca earthquake using INSAR*

Gergely László and Lóránt Földváry

Institute of Geoinformatics, Alba Regia Technical Faculty, Óbuda University, Hungary

*ESA perspective on lunar surface exploration*

Mátyás Hazadi

European Space Agency, The Netherlands

*Satellite Fading Classification with Artificial Intelligence for 5G*

Boldizsár Márton and László Csurgai-Horváth

Department of Broadband Infocommunications and Electromagnetic Theory, BME, Hungary

*Investigation of stochastic disturbances in satellite connected terrestrial millimetre wave wireless mesh network*

János Bitó

Department of Broadband Infocommunications and Electromagnetic Theory, BME, Hungary

*Quantum Tracking a Dataset – a New Application of Quantum Cryptography*

Máté Galambos and László Bacsárdi

Dennis Gabor College, Hungary

*The RADCUBE project and beyond - Cosmic Radiation Monitoring CubeSat mission*

Dorottya Milánkovich, Zoltán Kovács, Gábor Marosy and Balázs Zábori

C3S Ltd., Hungary

February 28, 2019, Thursday

Location: Building I, ground floor, IB.026.

*Magyar tudósok krt. 2., Budapest, H-1117, Building I, ground floor*

**9:00 Welcome coffee**

*Session Chair: László Csurgai-Horváth*

**9:45 Keynote presentation**

*Recent dosimeter developments for human spaceflight at the Centre for Energy Research, Hungarian Academy of Sciences*

Attila Hirn, Centre for Energy Research, Hungarian Academy of Sciences, Hungary

**10:05-11:35 Technical presentations – Session Science and Technology II**

*UV Spectrophotometric Time Series Analysis of the Herbig Ae Star HD 163296*

Gerard M. Williger, Anna Vankó, Péter Ábrahám, Carol A. Grady and Ágnes Kóspál  
University of Louisville, KY, USA

*Studying the MART tomography approach under severe weather conditions*

Yuxiang Yan, Wusheng Hu, Juni Ildikó and Szabolcs Rózsa  
School of Transportation, Southeast University in China, China

*Transmission rates of lightning discharges into whistlers*

Dávid Koroncay, János Lichtenberger and Orsolya Ferencz  
Eötvös University, Hungary

*Exploitation of Sentinel-1 SAR data for studying geodynamic, tropospheric and ionospheric processes*

István Bozsó, Eszter Szűcs, László Bányai and Viktor Wertzgerom  
Geodetic and Geophysical Institute, MTA Research Centre for Astronomy and Earth Sciences,  
Hungary

*A wide swath of Sentinel-based deformation monitoring applications in Hungary*

Péter Farkas, Gyula Grenczy and Sándor Frey  
Geo-Sentinel Ltd., Hungary

*Developing Balloon-Borne Payload for Remote Sensing Applications*

Zsófia Bodó and Bence Góczán  
Simonyi Károly College for Advance Studies, BME, Hungary

**11:35- 11:50 Break**

**11:50-11:55: Opening of the Education and Outreach Session**

László Jakab, Dean, Faculty of Electrical Engineering and Informatics, BME

**11:55-13:40: Technical presentations – Session Education and Outreach I**

*CoderDojo and the emergence of informal space tech education ecosystems*

Radu Ticiu, Andrea Magyar and Virgiliu Pop

CoderDojo Timisoara, Romania

*The Watermill-Project for Secondary Schools*

Carmen Adina Oancea and Otilia Bogdana Lastun

Colegiul National “Octavian Goga” Sibiu, Romania

*Inspiring the Next Generation in the Hungarian Space Camp*

Dorottya Milánkovich and László Bacsárdi

Hungarian Astronautical Society, Hungary

*The technology of CanSats, which can involve secondary school students in space*

András Illyés, Levente Dudás and András Gschwindt

Budapest University of Technology and Economics, Hungary

*The popularization of space exploration amongst high school students*

Ténia Kovács, Annamária Komáromi and Andrea Király

Eötvös Loránd University, Hungary

The MarsQuake Program for Hungarian High School Students

Márta Kiszely and György Hudoba

Geodetic and Geophysical Institute, MTA Research Centre for Astronomy and Earth Sciences, Hungary

Space weather and Arduino meteo station

Mária Pető

Székely Mikó High School Sf. Gheorghe, Romania

**13:40 Closing remarks**

## Poster presentations (Session Science and Technology III; Session Education and Outreach II)

### *Building the First Hungarian Free-space Quantum Communication Device*

Máté Galambos, László Baczárdi, Zoltán Belső, Eszter Gerhátné Udvary, Győző Gódor, Sándor Imre, Zsolt Kis, István Koller, János Kornis, Zsolt Papp and Viktor Zsolczai  
Budapest University of Technology and Economics, Hungary

### *Detection of Tsunamis based on Ionospheric Satellite Signals*

Gergely Mindler, Márk György Fék and Bence Szendi  
Hungary

### *Educational Aspects of Developing a High Altitude Balloon Platform*

Zsófia Bodó and Bence Góczán  
Simonyi Károly College for Advance Studies, BME, Hungary

### *Estimating 3D Rain Fields with Satellite Beacon Measurements*

Bernard Adjei-Frimpong and László Csurgai-Horváth  
Department of Broadband Infocommunications and Electromagnetic Theory, BME, Hungary

### *Evaluation of plasma properties from ground measurements for radiation belts modeling*

Lilla Juhász, Yoshiharu Omura, János Lichtenberger and Reinhard H. Friedel  
Eötvös Loránd University, Hungary

### *Neutron transport simulations in lunar surface regolith*

Szabolcs Nagy and Dávid Lucsányi  
Puli Space Technologies Ltd., Hungary

### *Popularizing space-related activities in the Z-generation*

Ákos Gyenge and Donát Takács  
BME Cosmos Society, Budapest University of Technology and Economics, Hungary

### *Simulated Mars Rover Model Competition – 2018 and 2019 back to the MARS*

Attila Sipos and Pál Gábor Vizi  
magyarokamarson.hu, Hungary

### *Simulating the effects of solar particle radiation on serum immunoglobulin N-GLYCANS by capillary electrophoresis analysis*

András Guttman, Máté Szarka, Szabolcs Szilasi, Dániel Sárközy, Boglárka Döncző and István Rajta  
Horváth Csaba Laboratory of Bioseparation Sciences, University of Debrecen, Hungary

### *Small steps towards strengthening the competitiveness in space research and technology - Space-related Education Initiative for Hungary*

Andrea Strádi, László Baczárdi, András Ordasi, András Illyés, Zsófia Bodó and Dániel Szendrei  
Hungarian Astronautical Society, Hungary

*Stereo-vision based navigation of mobile robots in pathless environments*

Pejman Hajipoor

Sharif University of Technology Iran

*Streaming Swarms as Inter-Station and Interplanetary Transfer Pipes*

Pál Gábor Vizi

Wigner Research Centre for Physics, HAS, Hungary, Hungary

*Thermal simulations and analysis of a lunar surface payload*

Bars Palfi, Dávid Lucsányi and Csaba Jeger

Puli Space Technologies Ltd., Hungary

*UltimaSpace Experiments on the ISS*

Flórián Vámosi and Péter Pósa Mihály Táncsics Grammar School of Kaposvár

Hungary

*Why Astrophotography is the Best Promotion for Space Exploration and Astronomy?*

Péter Feltóti, László Francsics and Flórián Vámosi

Hungarian Astrophotographers' Association, Hungary