UNITED NATIONS
Office for Outer Space Affairs

The United Nations/Romania International Conference on Space Solutions for Sustainable Agriculture and Precision Farming", Cluj, Romania, 6-10 May 2019

Programme at a glance

	Monday 6 May 2019	Tuesday 7 May 2019	Wednesday 8 May 2019		Thursday 9 May 2019	Friday 10 May 2019
Morning	08:30-09:00 Registration 09:00-09:30 Opening ceremony 09:30-10:50 Keynote presentations 11:15-12:45 Session 1 Space for Sustainable Agriculture and Precision Farming	09:00-10:30 Session 3 Emerging technologies and integrated applications in agriculture 11:00-12:30 Session 4 Agricultural mapping and risk assessment	09:00-10:30 Session 5 Monitoring agriculture space and aerial platforms 11:00-12:30 Session 6 Monitoring land and soil degradation	09:00-12:30 Parallel Session Soil Minimum Tillage Systems		09:30-13:00 Education day (workshop)
Lunch	12:45-14:00	12:30-14:00	12:30-14:00		09:00-16:00 Field visit	
Afternoon	14:00-15:30 Session 1 [continued] Space for Sustainable Agriculture and Precision Farming 15:30-16:00 Poster session 16:00-17:30 Session 2 Space for Sustainable Agriculture at the national level	14:00-16:15 Interactive session 16:15-17:00 Poster session 17:00-17:30 Interactive session conclusion	14:00 Concluding session Key messages by the moderator or rapporteur of each plenary session 15:00-15:30 Closing session			
Evening	18:00-20:00 Social event					

UNITED NATIONS
Office for Outer Space Affairs

The United Nations/Romania International Conference on Space Solutions for Sustainable Agriculture and Precision Farming", Cluj, Romania, 6-10 May 2019

Agenda of the Conference

Day 1 (6 MAY 2019): Opening and Keynote Sessions

Time	Activity		Speaker
08:30-09:00	Registration		
09:00-09:30	Opening ceremony		
09:30-10:50	Keynote Presentations	Organisation	
09:30-09:50	Setting the Scene: Space for Agriculture and opportunities for developing countries	UNOOSA	Shirish Ravan
09:50-10:10	Space activities in Romania	ROSA	Marius-Ioan Piso
10:10-10:30	Earth Observation and Agriculture	European Space Agency	Patrick Griffiths
10:30-10:50	EGNOS and Galileo for Precision Farming	European Global Navigation Satellite Systems Agency	Joaquin Reyes Gonzales
10:50-11:15	Group photo & coffee break		

Day 1 (6 MAY 2019): Morning session

Time	Activity	Country/Organisation	Speaker
11:15-12:45	Session 1: Space for Sustainable Agriculture and Precision Farming		
11:15-11:30	1. Applications of digital soil mapping for precision agriculture in developed and developing countries	UNSW Sydney, Australia	John Triantafilis
11:30-11:45	2. Assessment of nutrients and organic matter balance response to fertilization and programmed crop yield	Sumy National Agrarian University, Ukraine	Elina Zakharchenko
11:45-12:00	3. Technology for Local and Regional-Scale Assessment of Agricultural Landscape Dynamics Within the Framework of EU Common Agriculture Policy (CAP)	Institute of Agricultural Economy, Romanian Academy	Olimpia Copacenaru, Mihai Chitea
12:00-12:15	4. Mapping crop types in support of sustainable agriculture and precision farming	National Satellite Meteorological Center, China Meteorological Administration, China	Jinlong Fan
12:15-12:45	Questions and comments from the audience		
12:45-14:00	Lunch break		

UNITED NATIONS
Office for Outer Space Affairs

The United Nations/Romania International Conference on Space Solutions for Sustainable Agriculture and Precision Farming", Cluj, Romania, 6-10 May 2019

Day 1 (6 MAY 2019): Afternoon session

Time	Activity	Country/Organisation	Speaker
14:00-15:30	Session 1: Space for Sustainable Agriculture and Precision Farming [continued]		
14:00-14:15	5. Resolving food security through technology	Punjab Information Technology Board, Pakistan	Maria Zubair
14:15-14:30	6. The impact of climate change on rice production in Thailand	University of Birmingham/ Ministry of Agriculture and Cooperatives of Thailand	Jainta Chomtoranin
14:30-14:45	7. Innovative digital solutions for a sustainable and productive Agriculture	Airbus DS, Germany/France	Joe Cotti
14:45-15:00	8. Global Supply Chain and Satellite Technology to Support the Agriculture Sector in Central America	El Salvador Aerospace Institute, El Salvador	Luis Alfaro
15:00-15:30	Questions and comments from the audience		
15:30-16:00	Coffee break and poster session		
16:00-17:30	Session 2: Space for Sustainable Agriculture at the national level		
16:00-16:15	9. Remote sensing and geospatial databases for the Brazilian agriculture sustainable development	Brazilian Agricultural Research Corporation (Embrapa), Brazil	Edson Luis Bolfe
16:15-16:30	10. Beneficial uses of space technology in the Mexican Agroalimentary sector	Mexican Space Agency, Mexico	Verania Echaide
16:30-16:45	11. CAP monitoring in Romania using Copernicus data – Challenges and Perspectives	Terrasigna, Romania	Florin Serban, Cristian Flueraru
16:45-17:00	12. Satellite Application in Agriculture in Bhutan	Ministry of Agriculture & Forests, Bhutan	Tenzin Dendup
17:00-17:30	Questions and comments from the audience		
18:00-20:00	Social Event		

UNITED NATIONS
Office for Outer Space Affairs

The United Nations/Romania International Conference on Space Solutions for Sustainable Agriculture and Precision Farming", Cluj, Romania, 6-10 May 2019

Day 2 (7 MAY 2019): Morning session

Time	Activity	Country/Organisation	Expert
09:00-10:30	**Session 3: Emerging technologies and integrated applications in Agriculture**		
09:00-09:15	13. Geo-Big Data and Digital Augmentation for Sustainable Agri-Food Systems	ICARDA-CGIAR, Egypt	Chandrashekhar Biradar
09:15-09:30	14. Hyperspectral remote sensing and fluorescence methods for wheat phenological change monitoring	University of Warsaw, Poland	Bogdan Zagajewski and Marlena Kycko
09:30-09:45	15. Simplifying Precision Agriculture using the ArcGIS Platform	ESRI Romania	Lucian Zavate
09:45-10:00	16. Multiple Derived Outcomes of satellite image processing for different stakeholders	Black & Veatch Pvt. Ltd, India	Gunjan Shetye and Tushar Kulkarni
10:00-10:30	Questions and comments from the audience		
10:30-11:00	**Coffee break**		
11:00-12:30	**Session 4: Agricultural mapping and risk assessment**		
11:00-11:15	17. Water Footprint SaaS Application	Ecometrica, United Kingdom	Bertil Abbing
11:15-11:30	18. Mapping and assessment of soil ecosystem services	Mykolas Romeris University	Paulo Pereira
11:30-11:45	19. A geographic information system for assessing the suitability of Romanian land to crops and land use	West University of Timisoara-Romania	Andrei Dornik, Marinela Chetan, Lucian Dragut, Horea Cacovean
11:45-12:00	20. Impact of Soil and Water Conservation Practices on Hydrological Properties Using SWAT Model	World Resources Institute Indonesia	Dede Sulaeman
12:00-12:30	Questions and comments from the audience		
12:30-14:00	**Lunch break**		

Day 2 (7 MAY 2019): Afternoon session

Time	Activity
14:00-16:15	Interactive session
16:15-17:00	Coffee break and poster session
17:00-17:30	Outcomes of interactive session

UNITED NATIONS
Office for Outer Space Affairs

The United Nations/Romania International Conference on Space Solutions for
Sustainable Agriculture and Precision Farming", Cluj, Romania, 6-10 May 2019

Day 3 (8 MAY 2019): Morning session

Time	Activity	Country/Organisation	Expert
09:00-10:30	**Session 5: Monitoring agriculture space and aerial platforms**		
09:00-09:15	21. Determination of the Soil Physical and Chemical Properties via Using Unmanned Aerial Vehicles Equipped Multispectral Camera	Kahramanmaras Sutcu İmam University, Turkey	Turgay Dindaroglu
09:15-09:30	22. Use of Drones in Crop Insurance	Davacc Tech Ltd, Kenya	Benard Sabwa
09:30-09:45	23. Sentinel-2 for Agriculture Project: Towards Sentinel-2 Exploitation for Agriculture Monitoring	CS ROMANIA SA, UCLouvain, Belgium, CESBIO, France, European Space Agency	Cosmin Cara
09:45-10:00	24. Satellite and Drone Images to Help Cacao Farming in Peru	Universidad de Ciencias y Humanidades, Peru	Avid Roman Gonzalez
10:00-10:30	Questions and comments from the audience		
10:30-11:00	**Coffee break**		
11:00-12:30	**Session 6: Monitoring land and soil degradation**		
11:00-11:15	25. Long term land use change affects soil erosion in the Nepal Himalayas	University of New England, Australia	Devraj Chalise
11:15-11:30	26. Assessment of land degradation neutrality (LDN) based on earth observation datasets in Southern Tunisia	Institut des Regions Arides, Tunisia	Bouajila Essifi
11:30-11:45	27. Soil Classification Techniques on Local Areas Based on Satellite Data	Technical University of Cluj-Napoca/USAMV Cluj	Dorian Gorgan, Teodor Rusu
11:45-12:00	28. Soil Damage of Eastern Herzegovina By Radionuclides	Faculty of Agriculture, University of East Sarajevo, Bosnia and Herzegovina	Vesna Tunguz
12:00-12:30	Questions and comments from the audience		
12:30-14:00	**Lunch**		

UNITED NATIONS
Office for Outer Space Affairs

The United Nations/Romania International Conference on Space Solutions for Sustainable Agriculture and Precision Farming", Cluj, Romania, 6-10 May 2019

Day 3 (8 MAY 2019): Parallel session on Soil Minimum Tillage Systems

Time	Activity	Country	Expert
09:00-12:30	**Parallel Session 5: Paper presentation in plenary**		
09:00-09:15	1. Influence of soil tillage system on soil moisture and temperature, maize and soybean production	Romania, Poland	T. Rusu, I. Bogdan, F. Chetan, V. Deac L. W. Szaidak, A. I. Pop, P. I. Moraru, A. Şimon
09:15-09:25	2. Soil's organic and inorganic forms of nitrogen and the properties of humic substances as the result of long-term tillage intensity	Poland, Romania	L. W. Szaidak, T. Meysner, T. Rusu, M. Szczepański
09:25-09:35	3. The long-term effect of the soil tillage systems, fertilization and rotation soybean-winter wheat-maize on certain soil attributes and yields specific to different pedoclimatic conditions, in Turda area	Romania	F. Chetan, C. Chetan
09:35-09:45	4. Soil aggregate stability assessed by different laboratory methods	Romania	D. Ţopa, A. E. Calistru, I. G. Cara, L. Raus, G. Jitareanu
09:45-09:55	5. The eternal search for simple methods of assessing soil quality/degradation	Spain	M. Pulido, J. Barrena, S. Schnabel, A. Cerda F. L. Contador
09:55-10:05	6. The influence of the tillage system on weed spectrum in soybean culture	Romania	A. Simon, F. Chetan, M. Bardas, V. Deac, A. Popa, V. Oltean
10:05-10:15	7. Conservation agriculture: new principles and components	Romania	I. Bogdan, A. I. Pop, S. C. Gadea M. Maxim, P. I. Moraru, T. Rusu
10:15-10:25	8. Physical soil properties analyzed under different tillage systems	Romania	A. E. Calistru, D. Topa, C. Cuconiu, F. Herciu, S. Capsuna, G. Jitareanu
10:25-10:35	9. Agrochemical characterization of soils from Cluj county	Romania	St. Bakos, H. Fodor, H. Cacovean, D. Gheaja, C. Ferent, M. Bugner, M. Fodor, A. Pop, A. Olosutean, N. Pop, T. Rusu
10:35-10:45	10. New data on wheat pests and their integrated combat in the conservative no tillage soil system.	Romania	D. Malschi, I. D. Darab, A. D. Tarau, F. Chetan, A. Valean, C. Chetan, L. M. Şopterean
10:45-10:55	11. Modern techniques for initial stages identification of agricultural soil degradation processes	Romania	F. Filipov, C. D. Gales, A. E. Calistru, G. Jitareanu
10:55-11:05	12. Need to apply the minimum tillage on sandy lands	Romania	I. Saracin, O. Pandia, L. Olaru, F. Grecu
11:05-11:15	13. Influence of soil tillage systems and weed control on soybean production	Romania	P. I. Moraru, T. Rusu, I. Bogdan, A. I. Pop, F. Chetan, A. Simon, M. A. Maxim
11:15-11:25	14. Studies on using optical sensors in agricultural production	Romania	A. Molnar-Irimie, O. Ranta, O. Marian, D. Pacurar, G. Martis
11:25-11:35	15. Analysis of synthetic aperture radar for agriculture applications: a review	Romania	O. Marian, V. Crisan M. Muntean, O. Ranta, A. Molnar
11:35-11:45	16. Sensors used to determine physical soil properties	Romania	O. Marian, V. Crisan, M. Muntean, O. Ranta, A. Molnar,
11:45-11:55	17. The impact of built-up area expansion on agricultural ecosystems: Cluj metropolitan area	Romania	E. M. Birsanuc, D. Petrea
11:55-12:05	18. The assessment of soil heavy metal contamination using proximal sensing methods and geostatistical analysis	Romania	T. Man, D. Weindorf, L. Paulette
12:05-12:30	**Questions and discussion**		

UNITED NATIONS
Office for Outer Space Affairs

The United Nations/Romania International Conference on Space Solutions for Sustainable Agriculture and Precision Farming", Cluj, Romania, 6-10 May 2019

Day 3 (8 MAY 2019): Concluding session

Time	Activity
14:00-15:30	**Concluding session**
14:00-15:00	Key messages by the moderator/rapporteur of each session
15:00-15:30	Closing session

Day 4 (9 MAY 2019): Optional field visit

Day 5 (10 MAY 2019): Education day (Workshop)

Time	Activity	Expert/Organisation
09:00-09:30	**Registration for teachers**	
09:30-09:40	**Welcoming remarks**	
09:40-12:45	**Presentations**	**Expert/Organisation**
09:40-10:00	UNOOSA Capacity-building programme	Irianna Vlachopoulou, UNOOSA
10:00-10:40	ESA Leo Works software	Adrian Stoica, Terrasigna
10:40-11:00	GEOMAG: an ERASMUS+ project in Tunisia	ROSA/USAMV Bucharest
11:00-11:15	ESERO Project	Virgiliu Pop, ESERO Romania, ROSA
11:15-12:15	Space as a context in the classroom	Cristina Stancu, ESERO Romania, ROSA
12:15-12:45	Radio astronomy and inspiring teachers to use technology in the classroom	Paul Dolea, Technical University of Cluj Napoca
12:45-13:00	**Closing ceremony**	

UNITED NATIONS
Office for Outer Space Affairs

The United Nations/Romania International Conference on Space Solutions for Sustainable Agriculture and Precision Farming", Cluj, Romania, 6-10 May 2019

Poster Presentations

Title	Country/organisation	Expert
Moisture dynamics in the root zone as related to capillary and drainable pores in the Nile delta soils	Faculty of Agriculture, Menoufia University, Egypt	Abdelmonem Amer
Drought analysis based on MODIS satellite in the Baragan Plain	Romanian National Meteorological Administration, Institute of Geography of the Romanian Academy, Romania	Claudiu-Valeriu Angearu, Anisoara Irimescu, Dan Balteanu
Climate change effects to agriculture of Trakya region	Trakya University, Turkey	Cenk Atlig
Advanced UAV Lidar system for fast crop monitoring	University of Agricultural Sciences and Veterinary Medicine Bucharest, PROSIG EXPERT, Romania	Octavian Balota, Daniela Iordan, Gabriel Popescu, Daniel Ilie, Gabriela Vasile
Present-day research on landslide susceptibility and ecosystem services and future RS applications	Institute of Geography, Romanian Academy, Romania	Dan Balteanu, Mihai Micu, Monica Dumitrascu, Bianca Mitrica, Marta Jurchescu, Mihaela Sima, Gheorghe Kucsicsa, Ines Grigorescu
Solarvibes - Revolutionising IoT and community based smart farming for small farmers	Solarvibes, Germany	Swathish Bellam Ravi
The impact of built-up area expansion on agricultural ecosystems: Cluj Metropolitan Area	Babeș-Bolyai University, Cluj-Napoca, Romania	Birsanuc Elena-Manuela, Petrea Danuț
Use the mapping and assessment of ecosystems services methodology to support decision for sustainability of agroecosystems at the catchment scale – study case Râul Negru, Covasna, Romania	MULTIDIMENSION SRL, Environmental Protection Agency Covasna, Water Management District Covasna, Romanian Space Agency-Romania	Florian Bodescu, Luminita Balalau, Marius Danila, Attila Pal, Ion Nedelcu
Soil organic carbon content evaluation using superspectral satellite data	Alexandru Ioan Cuza University of Iasi, Technical University Gheorghe Asachi of Iasi, Romania	Iuliana Gabriela Breaban, Ana-Ioana Breaban, Elena Diana Bobric
Physical soil properties analyzed under different tillage systems	University of Agricultural Sciences and Veterinary Medicine Iasi, Romania	Anca-Elena Calistru, D. Topa, Cristina Cuconiu, F. Herciu, S. Capsuna, G. Jitareanu
Improvement of the water management by applying the conservative system at the winter wheat in the Turda Area	Agricultural Research and Development Station Turda, Romania	Felicia Chetan, Cornel Chetan
Application of GIS technologies in the decision-making process of utilization at the local scale of manure produced in small households of the Republic of Moldova	Institute of Pedology, Agrochemistry and Soil Protection "Nicolae Dimo", The Republic of Moldova	Tatiana Ciolacu
Romanian Position Determination System (ROMPOS) and Spatial Data Infrastructure - current solutions for agriculture	National Center of Cartography, Bucharest, Romania	Anca Dabija, Vlad Sorta
Satellite monitoring of agriculture in Bulgaria - use-cases from SRTI-BAS	Space Research and Technology Institute, Bulgarian Academy of Sciences (SRTI-BAS)	Lachezar Filchev
Rehabilitation of under-ploughed compacted layer of tunnels soils growth with organic vegetables	University of Agricultural Sciences and Veterinary Medicine of Iasi, Romania	F. Filipov, I. Bodale., V. Stoleru

UNITED NATIONS
Office for Outer Space Affairs

The United Nations/Romania International Conference on Space Solutions for Sustainable Agriculture and Precision Farming", Cluj, Romania, 6-10 May 2019

Title	Country/organisation	Expert
Modern techniques for initial stages identification of agricultural soil degradation processes	University of Agricultural Sciences and Veterinary Medicine Iasi, Romania	F. Filipov, C. D. Gales, Calistru Anca Elena, G. Jitareanu
Influence of plastic mulch and land forming on the state of soils compaction from high plastic tunnel	University of Agricultural Sciences and Veterinary Medicine Iasi, Romania	F. Filipov, D. Topa., Anca Elena Calistru, G. Jitareanu
Mapping forest main-tree species composition by use of Sentinel 2 imagery. An experiment.	National Institute for Research and Development in Forestry "Marin Dracea", Romania	V. Gancz, B. Apostol, M. Petrila, A. Lorenț, Sorina Marin, Cristiana Marcu, Joița Apostol
Incorporating Earth Observation into bio-fertiliser production and utilisation schedule in support of subsistence farming	Delight Kocho, Ethiopia	Alemneh Teshale Habebo
Applying Circular Economy Principles in Agriculture for the Recovery of Resources from Biodegradable Waste	Institute for Research in Circular Economy and Environment "Ernest Lupan" (IRCEM), Romania	Gabriel Hirlav, Elena-Simina Lakatos
Space technology, a veritable tool for advanced irrigation in Nigeria	National Space Research and Development Agency, Nigeria	Nwanneka Ibekwe
How precision farming can protect the archaeological site of Micia Roman Fort, Romania	Romanian Space Agency, University of Agronomic Sciences and Veterinary Medicine of Bucharest, Romania	Andi Mihai Lazar, Andreea Luminița Dedulescu, Cristina Elena Mihalache, Iulia Dana Negula, Cristian Moise, Alexandru Badea
Agriculture drought monitoring using Sentinel 2 imagery. A case study: Southern Baragan Plain	Romanian Space Agency, University of Bucharest, Romania	Andi Mihai Lazar, Andreea - Florentina Marin
Airborne Remote Sensing Capabilities for Agriculture and Land-Use Planning	National Institute for Aerospace Research "Elie Carafoli"- INCAS, Bucharest, Romania	D. C. Leonte, A. Toderas, F. S. Ologu
The assessment of soil heavy metal contamination using proximal sensing methods and geostatistical analysis	Texas Tech University Lubbock, Texas, USA, Babes-Bolyai University Cluj-Napoca, University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca, Romania	Titus Man, David Weindorf, Laura Paulette
Remote sensing data analyses-based result for Romanian Coastal Zone	National Institute for Marine Research and Development "Grigore Antipa", Romania	Razvan Mateescu, Dragos Niculescu, Elena Vlasceanu
Soil pollution assessment using magnetic methods in Truskavets (Lviv region, Ukraine)	Taras Shevchenko National University of Kyiv, Ukraine	Oleksandr Menshov
Forest composition assessing method by using UAV systems and SVM models. Case study – Hanu Conachi independent forest-Galati County	"Dunarea de Jos" University Galati, "Marin Dracea" National R&D Institute in Forestry; Agricultural Pedological Studies Institute Cluj-Napoca, Romania; Imperial College London, UK	Gabriel Murariu, Mihai Daniel Dragu, Adrian Murariu, Lucian Dinca, Dan Munteanu, Lucian Georgescu, Vlad Crisan, Horea Cacovean
GIS as a tool for smart agriculture: Our success story	County Government of Vihiga, Kenya	Hezekiah Nganyi
Detection and qualitative measurement of greening structures in agriculture landscape based on Remote sensing technology	Bundesforschungsinstitut für Kulturpflanzen, Kleinmachnow, Germany	Zvonimir Peric
Irrigated crops monitoring based on Sentinel 1 and Sentinel 2 data for the surface soil moisture estimation	Romanian Space Agency, University of Agricultural Sciences and Veterinary Medicine Bucharest, Romania	Violeta Poenaru, Alexandru Badea, Cristian Moise, Iulia Dana Negula, Doru Mihai

UNITED NATIONS
Office for Outer Space Affairs

The United Nations/Romania International Conference on Space Solutions for Sustainable Agriculture and Precision Farming", Cluj, Romania, 6-10 May 2019

Title	Country/organisation	Expert
Digital solution applied in Vineyard @Jidvei	SC JIDVEI SRLJidvei, Romania and PERLEUVE SRL, Italy	Daniela Popescu, Tiberiu Gaman, Maria Comsa, Adrian Moldovan, Giovanni Bigot
Precise environmental parameters monitoring in walnut orchards	Research Center for Spatial Information (CEOSpaceTech), University Politehnica of Bucharest, Romania	D. I. Sacaleanu, D. Faur, I. P. Manciu
Building a contemporary soil spectral library of samples from South-Western valleys of Bulgaria	Institute of soil science, agrotechnologies and plant protection "Nikola Poushkarov", Agricultural Academy, Bulgaria	Toma Shishkov
Application of planet data and GIS methods for evaluation of bee forage flora of Tysmienica meadow valley	Maria Curie-Sklodowska University, Poland	Marcin Siluch
Space technologies in coping with the effects of climate change	SAC-ISRO, India	Tatsat Thakore
Soil aggregate stability assessed by different laboratory methods	University of Agricultural Sciences and Veterinary Medicine of Iaşi, Romania	Denis Ţopa, Anca Elena Calistru, Irina Gabriela CARA, Lucian Raus, Gerard Jitareanu
Soil Damage of Eastern Herzegovina By Radionuclides	Faculty of Agriculture, University of East Sarajevo, Bosnia and Herzegovina	Vesna Tunguz
Mapping the deviation from optimum livestock density in the grassland agroecosystems of Romania within and outside the Natura 2000 Network	Institute of Biological Research Cluj, National Meteorological Administration, Grassland R&D Institute Braşov, Foundation Conservation Carpathia, National Museum of Banat, National Institute of Economic Research of Romanian Academy, University of Craiova, National Institute for R&D in Forestry "Marin Drăcea", Romania	Tudor-Mihai Ursu, Anamaria Roman, Irina Onţel, Teodor Maruşca, Oliviu-Grigore Pop, Sretco Milanovici, Alexandru Sin-Schneider, Carmen-Adriana Gheorghe, Sorin Avram, Sorina Farcaş, Jozsef Pal Frink
EEOBSS - EO education for Bulgarian secondary schools	Space Research and Technology Institute, Bulgarian Academy of Sciences (SRTI-BAS)	Lachezar Filchev, Ioannis Manakos, Rainer Reuter, Garo Mardirossian, Dimitar Dimitrov, Lubomira Kraleva, Tsveta Srebrova