

Excellence Research Centre for Earth Surveillance & Space-Based Monitoring of the Environment

NEWSLETTER

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FIND OUT IN THIS ISSUE

HIGHLIGHTS

GIS Day for EXCELSIOR p. 2

ERATOSTHENES Centre of Excellence becomes a p. 3 member of the EXCELSIOR consortium

EXCELSIOR members meet with the Minister of Climate p. 4 Change and Civil Protection of the Hellenic Republic

> Co-organization of the 41st EARSeL Symposium p. 4

More in this issue

p. 5 Latest news

ERATOSTHENES Centre of Excellence new personnel p. 15

Invited talks p. 16

MoU Agreements of the ERATOSTHENES Coe p. 18

Recent selected publications p. 20



Highlights

GIS Day for EXCELSIOR

In the framework of GIS Day, the EXCELSIOR H2020 Teaming Project, the ERATOSTHENES Centre of Excellence (ECoE) and the Department of Civil Engineering and Geomatics of the Cyprus University of Technology organized two presentations.

The first presentation on "Trends, Challenges and Perspectives in Geographic Information Systems" took place on Wednesday, November 17, 2021 and the speaker was Prof. Marinos Kavouras of the National Technical University of Athens.

The presentation of Prof. Kavouras can be accessed here.



second presentation focused The "Features and applications of ArcGIS Geographic Information Systems" and was held on Friday, November 19, 2021 by the executives of the Marathon Data Systems Mrs. Anastasia Mavridaki and Mr. Ioannis Kontos.

The presentation of Mrs. Mavridaki and Mr. Kontos can be accessed here.











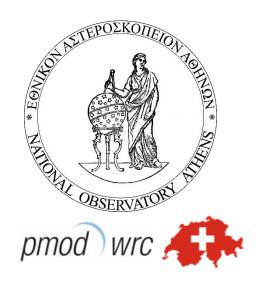




ERATOSTHENES Centre of Excellence becomes a member of the **EXCELSIOR** consortium

Following the successful completion of the EXCELSIOR H2020 Teaming Project amendments, the ERATOSTHENES Centre of Excellence has formally joined the consortium of the project. Two affiliated partners have joined the consortium as well. These are the Cyprus Centre for Research and Innovation (CyRIC) and the Physical-Meteorological Observatory Davos / World Radiation Centre (PMOD-WRC). They are affiliated to the ERATOSTHENES Centre of Excellence and the National Observatory of Athens, respectively.



















EXCELSIOR members meet with the Minister of Climate Change and Civil Protection of the Hellenic Republic, Dr. Christos Stylianides

Our team members Prof. Andreas Anayiotos and Dr. Christodoulos Danezis, met on the 18th of December 2021 with the Minister of Climate Change and Civil Protection of the Hellenic Republic, Dr. Christos Stylianides. During the meeting, particular attention was given to the infrastructure, data and know-how that ERATOSTHENES Centre of Excellence can offer to the Ministry for issues such as Climate Change, Air and Water Quality, Prevention and Management of Floods, Fires, Landslides, Seismic and Marine Pollution, and Natural Disaster Management as well as other applications in Agriculture and Energy and in Maritime and Air Safety and Civil Protection.



It was also agreed that a Memorandum of Cooperation (MoU) between the ERATOSTHENES Centre of Excellence and the Ministry will be signed during the upcoming visit of Dr. Stylianides to the infrastructure of the ERATOSTHENES Centre of Excellence in Limassol.

Co-organization of the 41st EARSeL Symposium

EARSeL is a scientific network of European remote sensing institutes, coming from both academia and commercial/industrial sector. Every year EARSeL organizes thematic Workshops of Special Interest Groups (SIGs), but the main meeting is the annual Symposium, which aims to indicate the current trends in remote sensing. The 41st EARSeL Symposium 2022 that will be held in Paphos, Cyprus on the 13-16 of September 2022. The symposium is organised by EARSeL and the ERATOSTHENES Centre of Excellence. We are looking forward to your abstracts. For more information please check here.















Latest news

Presentation to the Deputy Minister of Development and Investment of Greece Mr. Christos Dimas and the Deputy Minister of Research, Innovation and Digital Policy of Cyprus Mr. Kyriakos Kokkinos 14th of October 2021

On the 14th of October 2021, the Deputy Minister of Development and Investment of Greece Mr. Christos Dimas and the Deputy Minister of Research, Innovation and Digital Policy of Cyprus Mr. Kyriakos Kokkinos visited the Cyprus University of Technology. During their visit, the coordinator of the EXCELSIOR H2020 Teaming Project Prof. Diofantos Hadjimitsis held a presentation to inform the two deputy ministers about the research carried out at the university in the field of space technology through the EXCELSIOR H2020 Teaming Project. The two deputy ministers were informed about the progress of the EXCELSIOR H2020 Teaming Project and the ERATOSTHENES Centre of Excellence and had the opportunity to visit the workplaces / laboratories, and talk with the researchers of the Center of Excellence.

















Presentation of the EXCELSIOR H2020 Teaming Project at Alexander College, Pafos

10th of November 2021

On the 10th of November, Prof. Diofantos Hadjimitsis, Coordinator of H2020 Teaming the EXCELSIOR Project presented EXCELSIOR in an session conducted online Alexander College. There, discussed the benefits of earth observation and the opportunities risen through our EXCELSIOR H2020 Teaming Project.



First Capacity Building Training

22nd of November 2021



On the 22nd of November 2021 the First Capacity Building Training at ERATOSTHENES Centre Excellence was completed. The training was focused on Crop Classification using Sentinel Data and we got a lot of insights on Data Cube technologies, Machine Learning and Deep Learning methods. The trainina was prepared and delivered by our partners at the National Observatory of Athens.











Basic training on data processing at the ERATOSTHENES Centre of **Excellence**

3rd of December 2021

On the 3^{rd} of December 2021, our team completed the basic training on data processing at ERATOSTHENES Centre of Excellence. The training was focused on InSAR processing techniques, time series analysis and applications. The training was prepared and delivered by our partners at the National Observatory of Athens.



Participation at the seminar: "Space technologies: Applications in the public sector"

7th of December 2021



Our team member, Dr. Kyriacos Themistocleous was invited for a presentation at the seminar with title: "Space technologies: Applications in the public sector". The seminar was organized by the Department of Electronic Communications of the Deputy Ministry of Research, Innovation and Digital Policy. The presentation of Dr. Themistocleous was entitled "European Space Programme for Earth Observation COPERNICUS". The purpose of the seminar was to inform the public services and promote the use of space technologies and applications, as tools to facilitate various tasks and upgrade the quality of products and services, as well as to enhance the efficiency and productivity of the public service.



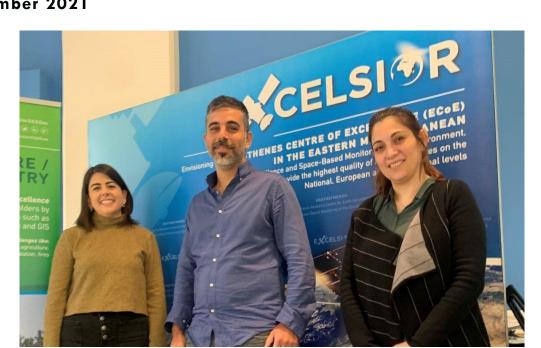








AGREEMAR joint project secured funding under the PRIMA Programme 13th of December 2021



The ERATOSTHENES Center of Excellence (ECoE) announces that in the framework of a research proposal submitted through a consortium of six (6) research organizations under the PRIMA Programme (Partnership for Research and Innovation in the Mediterranean Area), secured funding of 175000 EURO for the research project entitled "Adaptive agreements on benefits sharing for managed aquifer recharge in the Mediterranean region" (AGREEMAR). The total amount of funding of the consortium is 1.1 million EURO.

The AGREEMAR research project is expected to kick-off in the coming three (3) months, and its implementation period is thirty-six (36) months.

Specifically, the AGREEMAR consortium consists of Technische Universität Dresden (TUD) – Coordinator of the project, National Institute of Agronomy (INAT), Carthage University, adelphi research GmbH, Universitat Politecnica de Valencia (UPV), ERATOSTHENES Center of Excellence (ECoE) and Laboratório Nacional de Engenharia Civil (LNEC). Dr. Konstantinos Panagiotou is the coordinator of the project on behalf of the ERATOSTHENES Center of Excellence. The project team includes also the researchers Dr. Christiana Papoutsa and Eleni Loulli. It is worth noting that, the AGREEMAR project has received the highest score from the proposals submitted with the participation of Cypriot partners for this programme.

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Interview on CyBC Television Programme "Home in Nature"

23rd of January 2022

Our team member, Dr. Thomaida Polydorou gave an interview on the Television Programme "Home in Nature" where she discussed the research activities that relate to promoting Circular Economy. In particular she referred to the participation of the Department of Civil Engineering and Geoinformatics of the Cyprus University of Technology in research programs aiming to investigate the reuse of waste in the construction industry.



The ERATOSTHENES Centre of Excellence and the EXCELSIOR H2020 Teaming Project meet the key stakeholders within the EMMENA region

4th of February 2022



On the 4th of February 2022, in the framework of the EXCELSIOR H2020 Teaming Project, an online meeting was conducted, with topic: "The ERATOSTHENES Center of Excellence and the EXCELSIOR project meet the key stakeholders within the EMMENA region". The meeting was co-organized with the Mediterranean Regional Information Network (MedRIN) and intended to establish the needs and interests of key stakeholders on Earth Observation and Remote Sensing, with emphasis on the EMMENA region (East Mediterranean, Middle East & North Africa).





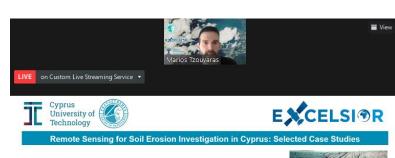




Participating in the online conference "Contribution of Geoinformatics to the Modeling of Soil Erosion"

4th of February 2022

Our team member Dr. Marios Tzouvaras, participated in the online conference "Contribution of Geoinformatics to the Modeling of Soil Erosion", which was organized by the Laboratory of Geophysics - Satellite Remote Sensing and Archaeoenvironment of the Institute of Mediterranean Studies - Institute of Research and Technology and the Technical University of Crete. There he had the opportunity to give a presentation on "Remote Sensing for Soil Erosion Investigation In Cyprus: Selected Case Studies"



Prof. Diofantos G. Hadjimitsis, Dr Athos Agapiou, <u>Dr Marios Tzouvaras,</u> Dr Christiana Papoutsa. Dr Christodoulos Mettas

Cyprus University of Technology (https://www.cut.ac.cy/)
ERATOSTHENES Centre of Excellence (https://eratosthenes.org.cy/)
marios.tzouvaras@cut.ac.cy

Online Workshop "Contribution of Geoinformatics in Soil Erosion Modelling" Friday, 4 February 2022



Meeting with the Director of the Deputy Ministry of Research, Innovation and Digital Policy, Dr. Stelios Himonas

7th of February 2022



On the 7th of February 2022, our team members had a meeting with the Director of the Deputy Ministry of Research, Innovation and Digital Policy, Dr. Stelios Himonas and the Director of the Department of Electronic Communications, Mr. George Komodromos to inform them about the progress of the EXCELSIOR H2020 Teaming Project and the ERATOSTHENES Centre of Excellence.





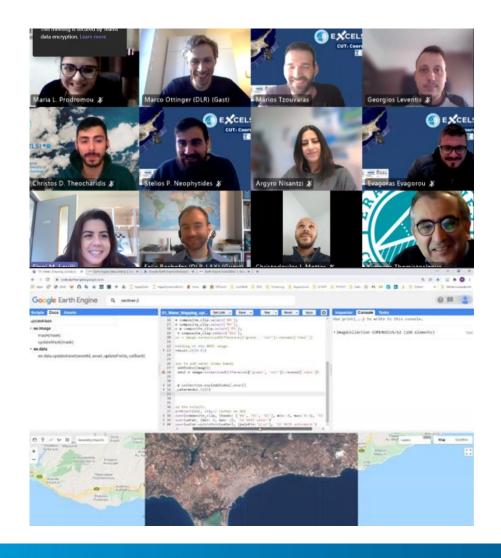






Training on Earth Observation data processing in cloud environments 9th of February 2022

On the 9th of February 2021, our team members completed the Earth observation data processing with Google Earth Engine (GEE). The main aim of the training was to give an introduction to the processing of earth observation data in cloud environments. In particular, the training provided an overview of cloud processing platforms (GEE, AWS, MS Planetary, DIAS, TEPs, etc.) and the basic principles of cloud processing. Our members were trained on basic programming principles and were introduced to the functionalities of the GEE platform. The training included the processing of multispectral (Sentinel-2, Landsat, etc.) and SAR data (Sentinel-1), as well. The practical examples were done for applications on water monitoring and vegetation dynamics with a spatial focus on Cyprus. The training was organized by our partners at the German Aerospace Centre (DLR).













SPACE UP CYPRUS 2022 LIVE

18th of February 2022

Under the guidance of our team member, Mr. Elpidoforos Anastasiou, a team of students of the Pascal Space Centre attempted to break the world record by sending a microsatellite into the stratosphere to capture images and videos from an altitude of 147,648 feet. The mission of the PICO micro-satellite it was eagerly awaited by the student community, as it featured the experiments of 32 public and private schools. The event was live broadcasted to the 32 participating schools. About 3,000 students had the opportunity to watch their experiments reaching space altitudes. The event was also featured on 6 national TV channels. The event was organized by the Cyprus Space Foundation, the Department of Meteorology and the ERATOSTHENES Centre of Excellence. The event can be accessed here.

















Participating at the 6th ESA PECS Briefing and Information Day 22nd of March 2022

Our team participated at the workshop "6th ESA PECS Call Briefing and Information Day on ESA's OPS-SAT2 and advanced telecommunication activities 2022", which was organized by the Department of Electronic Communications of the Deputy Ministry of Research, Innovation and Digital Policy, in collaboration with the European Space Agency (ESA).



Meeting with delegates from the European Space Agency (ESA)

24th of March 2022

On the 24th of March 2022, we hosted at our premises delegates from the European Space Agency (ESA). The aim of the visit was to let them know about our activities, competences and assets, and discuss about the sustainable contribution of ERATOSTHENES Centre of Excellence in ESA activities.















Training conducted to officers of the Department of Forests

29th of March 2022

On the 29th of March 2022, our team members gave a training to officers of the Department of Forests, in the framework of services provision by the ERATOSTHENES Centre of Excellence for the mapping of types of habitat within Sites of Community Importance (SCI) of the NATURA 2000 network in Cyprus. The training focused on the use of a classification algorithm created on the Google Earth Engine platform to classify types of habitat using Sentinel-2 satellite data.





Our team members Eleni Loulli and Despina Makri at Logos radio 30th of March 2022

On the 30th of March 2022, our team members Eleni Loulli and Despina Makri were hosted by Logos radio. There, they talked about the EXCELSIOR H2020 research project, and about the actions of the ERATOSTHENES Centre of Excellence to promote the Earth Observation.















ERATOSTHENES Centre of Excellence new personnel



Cleopatra Georgiou Accounting and **Financial Officer**



Dr. Ioannis Varvaris Researcher in Water Management



Anthia Christofini HR Manager



Stelios Neophytides Assistant Researcher A



Dr. Silas **Michaelides** Chief Operating Manager



Marina Pekri Assistant Researcher A



Dr. Kyriacos Themistocleous External Affairs & **Business Development** Director













Invited talks

In the framework of the EXCELSIOR H2020 Teaming Project education activities, we organise invited talks on a monthly basis

Date: 12th of October 2021

Topic: EO based information for the public and the

private sector Today and the future

Speaker: Mr. Stelios Bollanos

Link:

https://www.youtube.com/watch?v=WLpKvI4WcrA



Date: 26th of October 2021

Topic: Spatial Decision Support Tool for Monitoring

and Forecasting Soil Water Requirements in

Agriculture

Speaker: Ms. Mary Grace Gasco

Link:

https://www.youtube.com/watch?v=RDHrJPUe89Q



Date: 2nd of November 2021

Topic: Developing tools for marine plastics monitoring

Speaker: Ms. Els Knaeps

Link:

https://www.youtube.com/watch?v=mT-YzVZ9mNs











Date: 15th of December 2021

Topic: Use of satellite and model data to identify the onset of Ostreopsis ovata harmful algal bloom

onset of in the Ligurian Sea Speaker: : Dr Chiara Lapucci

Link:

https://www.youtube.com/watch?v=I2Z7xBqzRIA



Date: 15th of March 2022

Topic: Virtual Invited talk: The role of Earth

Observation data in the Copernicus Atmosphere

Monitoring Service for atmospheric composition and

air quality

Speaker: Dr. Mark Parrington

Link:

https://www.youtube.com/watch?v=YWHzWYuVCx

Q

















MoU Agreements of the **ERATOSTHENES** Coe

Politecnico di Milano - Architecture, Built environment and Construction **Engineering (ABC) Department**

A Memorandum of Understanding was signed on the 24th of November 2021, between the Politecnico di Milano - Architecture, Built environment and Construction Engineering (ABC) Department and the ERATOSTHENES Centre of Excellence (ECoE) of the Cyprus University of Technology. Within the framework of cultivating the relations between the two research institutions and the joint effort for mutual understanding and promotion scientific and educational cooperation, the Memorandum of Understanding aims to expand scientific, research, educational and other cooperation between the organisations.







AGREEMENT BETWEEN

ERATOSTHENES CENTRE OF EXCELLENCE AND UNIVERSITY POLITECNICO DI MILANO - Dipartimento di Architettura, Ingegneria delle Costruzioni e Ambiente costruito - Architecture, Built

environment and Construction Engineering (ABC)

Geomatic Technologies

A Memorandum of Understanding was signed on the 28th of February 2022, between the Geomatic **Technologies** ERATOSTHENES Centre of Excellence (ECoE) of the Cyprus University of Technology. Within the framework of cultivating the relations between the two research institutions and the joint effort for mutual understanding and promotion of scientific and educational cooperation, the Memorandum of Understanding aims expand scientific, research, educational and other cooperation between two organisations.













Novatex Solutions Ltd

A Memorandum of Understanding was signed on the 28th of February 2022, between the Novatex Solutions Ltd and the ERATOSTHENES Centre of Excellence (ECoE) of the Cyprus University of Technology. The Memorandum of Understanding between the two organisations aims to expand scientific, research, educational, and other cooperation between them in the context of cultivating mutual understanding and scientific educational promoting and cooperation.



European Centre For Emerging Competences and Technologies

A Memorandum of Understanding was signed on the 28th of February 2022, between the European Centre For Emerging Competences and Technologies and the ERATOSTHENES Centre of Excellence (ECoE) of the Cyprus University of Technology. Within the framework of cultivating the relations between the two research institutions and the joint effort for mutual understanding and promotion scientific and educational cooperation, the Memorandum of Understanding aims expand scientific, research, educational and other cooperation between two organisations.















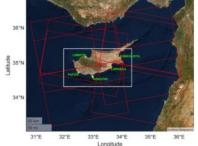
Recent Selected publications

Publications under the auspices of the EXCELSIOR H2020 Teaming **Project/ ERATOSTHENES Centre of Excellence:**

Journals

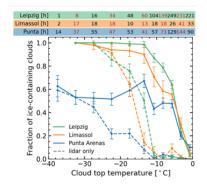
García-Ayllón, S.; Kyriakidis, P. Spatial Analysis of Environmental Impacts Linked to Changes in Urban Mobility Patterns during COVID-19: Lessons Learned from the Cartagena Case Study. Land 2022, 11, 81. https://doi.org/10.3390/land11010081





Stylianos Hadjipetrou, Stelios Liodakis, Anastasia Sykioti, Loukas Katikas, No-Wook Park, Soteris Kalogirou, Evangelos Akylas, Phaedon Kyriakidis, Evaluating the suitability of Sentinel-1 SAR data for offshore wind resource assessment around Cyprus, Renewable Energy, Volume 182, 2022, Pages 1228-1239, ISSN 0960-1481. https://doi.org/10.1016/j.renene.2021.10.100

Radenz, M., Bühl, J., Seifert, P., Baars, H., Engelmann, R., Barja González, B., Mamouri, R.-E., Zamorano, F., and Ansmann, A.: Hemispheric contrasts in ice formation in stratiform mixed-phase clouds: disentangling the role of aerosol and dynamics with ground-based remote sensing, Atmos. Chem. Phys., 21, 17969-17994, https://doi.org/10.5194/acp-21-17969-2021, 2021





Alexakis, D.D.; Manoudakis, S.; Agapiou, A.; Polykretis, C. Towards the Assessment of Soil-Erosion-Related C-Factor on European Scale Using Google Earth Engine and Sentinel-2 Images. Remote Sens. 2021, 13, 5019. https://doi.org/10.3390/rs13245019



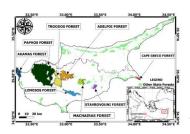






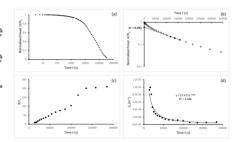
Agapiou, A.; Vionis, A.; Papantoniou, G. Detection Archaeological Surface Ceramics Using Deep Learning Image-Methods and Very High-Resolution UAV Land 2021, 10, Imageries. 1365. https://doi.org/10.3390/land10121365





Miltiadou, M.; Antoniou, E.; Theocharidis, C.; Danezis, C. Do People Understand and Observe the Effects of Climate Crisis on Forests? The Case Study of Cyprus. Forests 2021, 12, 1152. https://doi.org/10.3390/f12091152

Mazi, K., Akylas, E. & Koussis, A.D. Algebraic estimation of the specific storage from slug tests in confined aquifers in the overdamped case. Hydrogeol J 29, 2545-2553 (2021). https://doi.org/10.1007/s10040-021-02382-4





Tzouvaras, M. Statistical Time-Series Analysis of Interferometric Coherence from Sentinel-1 Sensors for Landslide Detection and Early Warning. Sensors 2021, 21, https://doi.org/10.3390/s21206799

Morsy, M.; Taghizadeh-Mehrjardi, R.; Michaelides, S.; Scholten, T.; Dietrich, P.; Schmidt, K. Optimization of Rain Gauge Networks for Arid Regions Based on Remote Sensing Data. Remote Sens. 2021, 13, 4243. https://doi.org/10.3390/rs13214243





Moutsiou T, Reepmeyer C, Kassianidou V, Zomeni Z, Agapiou A (2021) Modelling the Pleistocene colonisation of Eastern Mediterranean islandscapes. PLoS ONE 16(10): e0258370. https://doi.org/10.1371/journal.pone.0258370









Coming up in the 6th issue:

→ 6th European Space Generation Workshop 2022, hosted at our premises



→ Inauguration of ECoE premises at Franklin Roosevelt str. Limassol



→ 41st EARSeL Symposium in Paphos, Cyprus













Get in touch

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Department of Civil Engineering & Geomatics Faculty of Engineering and Technology Cyprus University of Technology **ERATOSTHENES** Centre of Excellence



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 857510



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CONSORTIUM











Affiliated entities









