

## NEWSLETTER

Issue #4

April 2021 – September 2021

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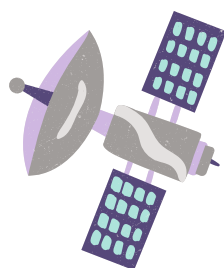
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# Highlights

## EXCELSIOR and ERATOSTHENES Centre of Excellence at Cyprus Launch Event for Horizon Europe

On April 7<sup>th</sup>, 2021, our team member Ms. Eleni Loulli participated in the National Launch Event for Horizon Europe.

Horizon Europe is the new EU flagship programme for Research and Innovation (R&I) – which sets the best minds in Europe and the rest of the world to work to deliver excellent solutions to the key issues of our time, supporting the EU’s policy priorities and building a better future for the next generation in Europe. Building on the success of Horizon 2020, Horizon Europe, with a total budget of almost 95,5 billion Euro for 2021-2027, provides a wealth of opportunities for the public and private sectors in Cyprus, as well as for the public in general.

During the event, Ms. Loulli was given the opportunity to talk about the success of the EXCELSIOR H2020 Teaming Project and the establishment of the ERATOSTHENES Centre of Excellence.

The event can be accessed [here](#).



## Important distinction for the ERATOSTHENES Centre of Excellence, as three of their members are included in the top 2% of researchers worldwide

The ERATOSTHENES Centre of Excellence has experienced tremendous success, with three of its members ranking among the top 2% of researchers in the world by a study published in December 2020 in PLOS BIOLOGY. In recognition of this achievement, the ERATOSTHENES Centre of Excellence congratulates its members and CUT Faculty - Prof. Phaedon Kyriakidis, Prof. Diofantos Hadjimitsis and Assistant Professor Athos Agapiou for this great accomplishment.

The list identifies the top 2% (159,684 out of 7,924,604) researchers who have published more than 5 papers since 1960 appearing in the Scopus data base; the actual data can be found at <https://data.mendeley.com/datasets/btchxktzyw/2>.

The ranking is based on a composite citation index integrating total citations, Hirsch's h-index, co-authorship-adjusted Schreiber's hm-index, number of citations to papers as single author, number of citations to papers as single or first author, and number of citations to papers as single, first, or last author (without and with self-citations) computed using Scopus citation data from 1996 to 2019 inclusive.

Researchers are classified into 22 scientific fields and 176 subfields and are also ranked within their subfield discipline taking into account the total number of authors within each subfield discipline.





## Second Virtual EXCELSIOR Workshop: "Atmospheric & Climate Research in the EMMENA Region"

**2<sup>nd</sup> Virtual EXCELSIOR Workshop**  
**Atmospheric & Climate Research in the EMMENA region**

Tuesday  
**8 June 2021**  
09:00 - 17:00 EEST  
06:00 - 14:00 UTC

**Registrations**  
<http://tiny.cc/EWorkshop2>

Partners: Cyprus University of Technology, DLR, Leibniz Institute for Tropospheric Research (TROPOS), DEC (Department of Electronic Communications), RSCy2021 Workshop, Cyprus Remote Sensing Society, Copernicus Academy, Copernicus School.

Funding: ERATOSTHENES: Excellence Research Centre for Earth Surveillance and Space-Based Monitoring Of the Environment; European Union's Horizon 2020 research and innovation programme (grant agreement No 857510); Government of the Republic of Cyprus through the Directorate General of the European's Programmes, Coordination and Development.

On June 8<sup>th</sup>, 2021, the EXCELSIOR H2020 Teaming Project Consortium and the ERATOSTHENES Centre of Excellence organized the Second Virtual International Workshop on 'Atmospheric & Climate Research in the EMMENA Region'.

This workshop was a part of a series of annual workshops with the participation of all national and international stakeholders of EXCELSIOR, addressing all the different activities of the ERATOSTHENES Centre of Excellence such as infrastructure, research, education, and innovation through entrepreneurship. It featured 22 invited talks by scientists and researchers of high caliber. Speakers from NASA, ESA, TROPOS, DLR, NOAA and other leading organizations spoke at the workshop about atmospheric & climate research.



**EXCELSIOR**  
ERATOSTHENES:  
Excellence Research Centre for Earth Surveillance  
& Space-Based Monitoring of the Environment

**The EarthCARE mission and validation programme**

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**Rob Koopman**  
European Space Agency

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

CONSORTIUM




**EXCELSIOR**  
ERATOSTHENES:  
Excellence Research Centre for Earth Surveillance  
& Space-Based Monitoring of the Environment

**Aeolus: ESA's wind mission. Overview, current status and future challenges**

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**TOMMASO PARRINELLO**  
European Space Agency

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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**EXCELSIOR**  
ERATOSTHENES:  
Excellence Research Centre for Earth Surveillance  
& Space-Based Monitoring of the Environment

**Global Precipitation Measurement (GPM) mission  
GPM Plans for the V07  
Reprocessing of Data**

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**Erich Franz Stocker**  
Precipitation Processing System (PPS), NASA/GSFC Code 610.2  
Erich.F.Stocker@nasa.gov

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

CONSORTIUM




**EXCELSIOR**  
ERATOSTHENES:  
Excellence Research Centre for Earth Surveillance  
& Space-Based Monitoring of the Environment

**EYWA**  
Early Warning System  
for Mosquito Borne Diseases

**EO based Early Warning System  
for Mosquito Borne Diseases  
An operational application in EU**

@excelsior2020eu 

**Haris Kontoes**  
BEYOND CENTER OF EXCELLENCE  
NATIONAL OBSERVATORY OF ATHENS

 Centre for EO Research & Satellite Remote Sensing

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

CONSORTIUM



Prof. Diofantos Hadjimitsis pointed out that this workshop was held to bring together atmospheric researchers and stakeholders concerned with EMMENA, so that challenges could be identified, and future projects could be discussed.. He highlighted that by joining forces, this collaboration would foster scientific growth and enhance citizens' quality of life.

The Second Virtual EXCELSIOR Workshop was co-organized with the Cyprus Remote Sensing Society for the RSCy2021.

The workshop can be accessed [here](#).

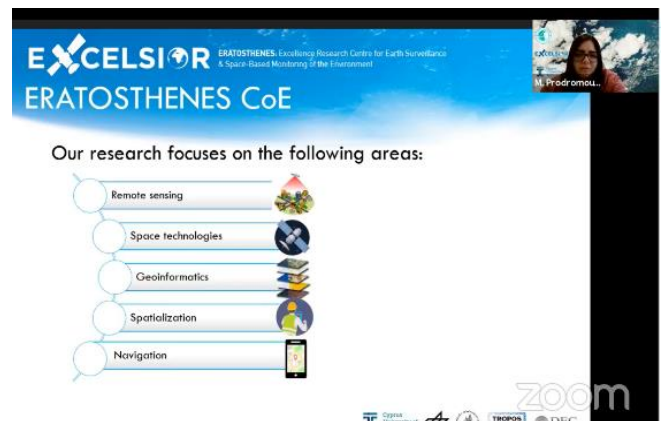


## Latest news

### Presentations at the First School on Smart Data Processing and Systems of Deep Insight

12<sup>th</sup>-16<sup>th</sup> of April 2021

Four members of our team gave presentations at the “First School on Smart Data Processing and Systems of Deep Insight” organized by DESTINI H2020 Twinning Project, which took place from the 12<sup>th</sup> until the 16<sup>th</sup> of April. As part of this event, Dr. Christiana Papoutsas presented the EXCELSIOR H2020 Teaming Project. Ms. Maria Prodromou and Ms Eleni Loulli presented the EXCELSIOR H2020 Teaming Project Smart Applications. Ms. Despina Makri gave a presentation on Land Movement Estimation Over Archeological Sites Using Space (Sentinel-1) and GIS Technologies.



### Participation at the “URBAN HERITAGE CLIMATE OBSERVATORY”, organized by GEO

April 27<sup>th</sup> of 2021



On April 27<sup>th</sup>, 2021, we participated at the "URBAN HERITAGE CLIMATE OBSERVATORY" organized by GEO. The EXCELSIOR H2020 Teaming Project team attended the event, as Cultural Heritage is one of the thematic areas of research at the ERATOSTHENES Centre of Excellence.

## Poster presentation at the EGU General Assembly 2021

19<sup>th</sup>-30<sup>th</sup> of April 2021

Our team members Dr. Rodanthi Elisavet Mamouri and Dr. Argyro Nisantzi presented a poster entitled “The ERATOSTHENES Centre of Excellence in the POLLYNET. First observations of the POLLYXT-CYP at Limassol, Cyprus” at the EGU General Assembly 2021.

The poster demonstrated details on the mission of the EXCELSIOR H2020 Teaming Project and how the lidar system, coordinated by the Cyprus University of Technology, will become a key component of the project.

The EGU General Assembly 2021 brought together geoscientists from all over the world to one meeting covering all disciplines of the Earth, planetary, and space sciences. The EGU’s main goal was to provide a forum where scientists, especially early career researchers, can present their work and discuss their ideas with experts in all fields of geoscience.

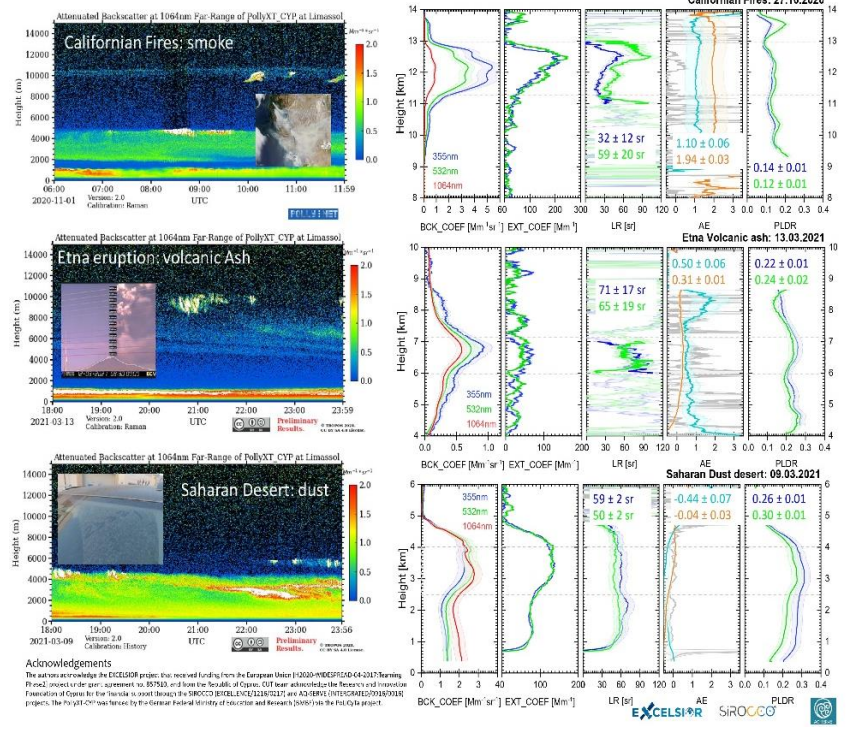
### The ERATOSTHENES Centre of Excellence in the POLLYNET

#### First observations of the POLLYXT-CYP at Limassol, Cyprus

Rodanthi-Elisavet Mamouri, Argyro Nisantzi, and Diofantos G. Hadjimitsis Cyprus University of Technology & ERATOSTHENES Centre of Excellence, Limassol, Cyprus  
Albert Ansmann, Ronny Engelmann, Johannes Bühl, Patric Seifert, Holger Baars, Zhenping Yin Leibniz Institute for Troposphärforschung, Leipzig, Germany

**Limassol, Cyprus (34.7°N, 33°E)**  
ideal natural laboratory for advanced and comprehensive field studies of climate change, aerosol-cloud-dynamics-precipitation interaction, weather-precipitation-dryness complex, representative for typical Mediterranean and near-Mediterranean meteorological conditions and for coastal areas in the EMMENA region

- A new generation POLLYXT lidar system start on 27th of October 2020, continuous operation, at Limassol, Cyprus.
- The POLLYXT-CYP build by TROPOS, will be hosted by the ERATOSTHENES Centre of Excellence [ECoE] for its permanent operation aiming to link the ECeE to ACTRIS and POLLYNET.
- Its task will be to document the complex mixture of the different aerosol species and clouds over the Eastern Mediterranean.
- The POLLYXT-CYP will be a key research infrastructure of the Cyprus Atmospheric Remote Sensing Observatory [CARO].
- The CARO of the ECeE is planned to become National Facility of the Republic of Cyprus for Aerosol and Cloud Remote Sensing Observations.



# EGU

## General Assembly 2021



## Presentation at the Workshop on solar energy applications, organised by inDust COST Action co-ordination

11<sup>th</sup> of May 2021

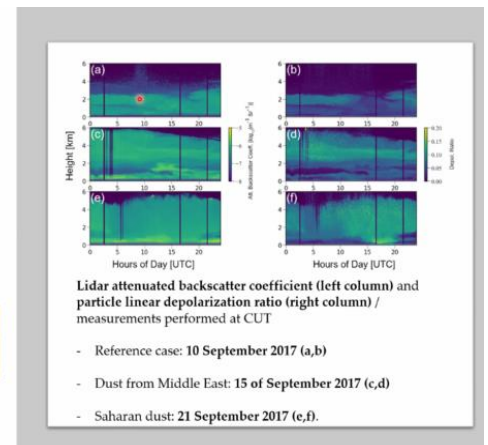
On May 11<sup>th</sup>, 2021, our team member Ilias Fountoulakis gave a presentation entitled “EXCELSIOR: Solar energy estimation in Cyprus” at the Workshop on solar energy applications, organised by inDust COST Action co-ordination. The topic of the workshop was “DustClim: Development of dust climate services for solar energy”.

His presentation included the key findings of the work published in the paper entitled “Effects of Aerosols and Clouds on the Levels of Surface Solar Radiation and Solar Energy in Cyprus”.



### Dust in Cyprus

- Dust is a significant fraction of the aerosol mixture, not only in Cyprus, but in general over the EMMENA region
- In Cyprus, dust transfer from North Africa and middle East is frequent, especially in Spring



## Meeting with the Advisory Board

12<sup>th</sup> of May 2021



On the 12th of May 2021, a meeting between the EXCELSIOR H2020 Teaming Project Consortium and the Advisory Board was held. Details of the project were discussed as well as valuable suggestions and new insights which were provided by the Advisory Board.



## Promoting the benefits of Copernicus Satellite Data to our stakeholders

14<sup>th</sup> of May 2021

On May 14<sup>th</sup>, 2021, the EXCELSIOR Coordinator, Prof. Diofantos Hadjimitsis, met with Mr. George Palas, the General Manager of Alexander College in Pafos to discuss the benefits of Copernicus Satellite Data through our EXCELSIOR H2020 Teaming Project.



## Presentations at OPHERA 1<sup>st</sup> Workshop

17<sup>th</sup> - 21<sup>st</sup> of May 2021

OPHERA 1<sup>st</sup> Workshop - ONLINE  
2<sup>nd</sup> Day Speakers (Morning Sessions):

17 - 21 May 2021

Full Agenda:

Mariatos Ioannides, George Tryfonos, UNESCO Chair on Digital Cultural Heritage  
 Nicholas Kyriakides, Cyprus University of Technology  
 Kyriacos Efsthios, ERA Chair MNEMOSYNE (Digital Cultural Heritage)

[www.ophera.beniculturali.it](https://www.ophera.beniculturali.it)  
[www.digitalheritagelab.eu](http://www.digitalheritagelab.eu)

OPHERA

Dr. Kyriacos Themistocleous and Dr. Nicholas Kyriakides, members of the EXCELSIOR H2020 Teaming Project were invited as speakers at the Ophera 1<sup>st</sup> workshop, held online between the 17<sup>th</sup> and 21<sup>st</sup> of May 2021. The 1<sup>st</sup> OPHERA Workshop focused on the digital technologies for knowledge and promotion of cultural heritage during the restoration & reconstruction process.

OPHERA 1<sup>st</sup> Workshop - ONLINE  
3<sup>rd</sup> Day Speakers (Morning Sessions):

17 - 21 May 2021

Full Agenda:

Jürgen Frick, Materials Testing Institute, University of Stuttgart, Germany  
 Kyriacos Themistocleous, Eratosthenes Centre of Excellence, Cyprus

[www.ophera.beniculturali.it](https://www.ophera.beniculturali.it)  
[www.digitalheritagelab.eu](http://www.digitalheritagelab.eu)

OPHERA

## Presentation of the EXCELSIOR H2020 Teaming Project at the REA online event

20<sup>st</sup> of May 2021

On May 20<sup>th</sup> 2021, Prof. Diofantos Hadjimitsis, Coordinator of the EXCELSIOR H2020 Teaming Project presented the project in the session of the Innovative Technologies in agriculture at the REA online event. The event was also attended by Dr. Christiana Papoutsas. The presentation given by Prof. Hadjimitsis focused on how new space technologies and Geoinformatics can be exploited in the field of agriculture.



## First Periodic Review Meeting

28<sup>th</sup> of May 2021



On the 28<sup>th</sup> of May 2021, the first Periodic Review meeting of the EXCELSIOR H2020 Teaming Project was conducted. The scope of the meeting was to inform the EU representatives about the progress of the project and to receive feedback from their side.



## Participation at the 40<sup>th</sup> EARSeL Symposium 2021

June 7<sup>th</sup> – 10<sup>th</sup> 2021

On June 7<sup>th</sup>, 2021, our team had a strong participation with 10 presentations at the 40<sup>th</sup> EARSeL Symposium 2021.

In particular, our team participated with the following presentations:

- **Polina Sokratous** - *Strategizing the “Smart City” model into an integrated system utilizing space technology and geoinformatics assets: A systematic approach to a resilient society: The study of Limassol, CY*
- **Eleni Loulli** - *Calibration of Ground-based Data for Precipitation Estimation in the Area of Cyprus*
- **Maria G. Iordanidou** - *Monitoring Common Agriculture Policy and Cross Compliance with Sen4Cap*
- **Maria Prodromou** - *Rapid Assessment of post fire forest regeneration based on burn severity gradient using the Google Earth engine*
- **Iosifina Kountouri** - *A Multi-disciplinary Integrated approach using Earth observation, GIG, Hydraulic Modelling for flood risk assessment in catchment areas in Cyprus*
- **Despina Makri** - *Imaging Spectroscopy of shallow coastal waters*
- **Marina Pekri** - *Estimation of mean sea surface height variability in Cyprus using Tide Gauge and Sentinel-3 Satellite Altimetry Data*
- **Kyriaki Fotiou** - *Space-based Deformation Monitoring of Coastal Urban Areas: The case of Limassol’s Coastal front*
- **Dimitris Kakoulli** - *Considerations and Multi-Criteria Decision Analysis for the Installation of Permanent Infrastructures for Continuous Space-based Monitoring of Natural Hazards*
- **Anastasis Evagorou** - *Earth Observation for an efficient water management in Cyprus*

## Co-organization of the 1<sup>st</sup> CASSINI Space Data Hackathon

18<sup>th</sup> – 20<sup>th</sup> of June 2021

Hundreds of participants came together from June 18<sup>th</sup> - 20<sup>th</sup>, 2021 to hack the future of our green spaces with European space technologies. EUSPA supported the hackathon with various experts and market development professionals who helped participants elaborate and finetune their solutions. The 1<sup>st</sup> CASSINI Hackathon took place in 10 European locations and tasked participants with leveraging geospatial information from Copernicus Earth observation data and its services, together with positioning technologies from Galileo and EGNOS, to digitise Europe's green spaces. At the end of the weekend, each location selected their top team to move forward to the European demo day and awards ceremony on the 24<sup>th</sup> of June. Each team pitched their solution to a jury of experts who engaged the winners in Q&A sessions before evaluating each idea. Prof. Diofantos Hadjimitsis, Coordinator of the EXCELSIOR H2020 Teaming Project was an appointed judge, and members of our team served as mentors for the participants from Cyprus. CASSINI Hackathon Cyprus was organized by CyRIC (Cyprus Research and Innovation Center certified by European Business Network), in collaboration with the Gravity Ventures Incubator, the ERATOSTHENES Centre of Excellence and the EXCELSIOR H2020 Teaming Project.



### The hackathon timeline & global theme





## Presentation at the Earth Observation Network seminar of the Imperial College London

24<sup>th</sup> of June 2021

On June 24<sup>th</sup>, 2021, Prof. Diofantos Hadjimitsis, Coordinator of the EXCELSIOR H2020 Teaming Project, was invited as a speaker at the Earth Observation Network seminar at the Imperial College London. Prof. Hadjimitsis presentation was entitled, "Joining forces through the EXCELSIOR H2020 Teaming Project & ERATOSTHENES Centre of Excellence: Overview, Synergies, Earth Observation (EO) & Geoinformatics Activities, digital innovation hub in the Eastern Mediterranean, Middle East and North Africa (EMMENA) for EO".



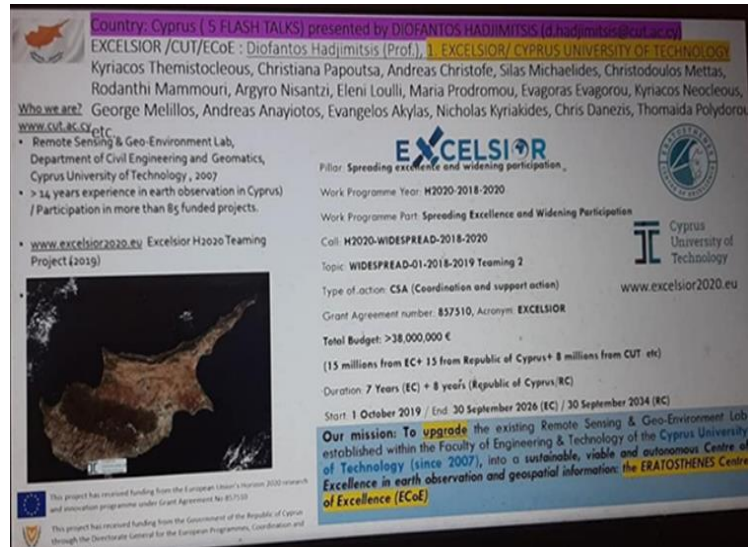
## DEFEA - Defence Exhibition Athens 13<sup>th</sup> - 15<sup>th</sup> of July 2021

Our team members Dr. George Melillos and Assistant Professor Chris Danezis participated in the DEFEA - Defence Exhibition Athens, International Defence & Security Exhibition. During their participation, they had the opportunity to meet with the Cypriot Minister of Defense, Mr. Charalambos Petrides and took part in an interview discussing about the 'EXCELSIOR' H2020 Teaming Project. The interview can be accessed [here](#).

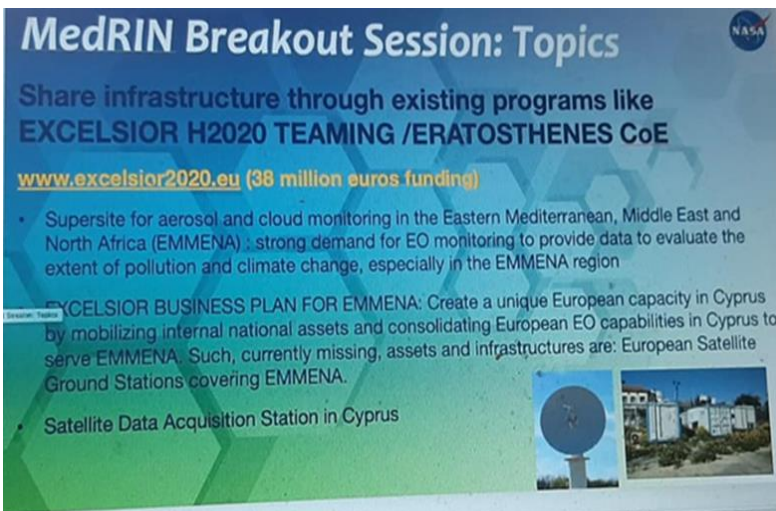
# Participation at the Joint NASA MedRIN and SCERIN Virtual Capacity Building Workshop

15<sup>th</sup> – 17<sup>th</sup> of June 2021

The Joint Mediterranean Regional Information Network (MedRIN) and South Central and Eastern European Regional Information Network (SCERIN) Capacity Building Workshop (Joint M&S CBW) took place virtually on the 15<sup>th</sup> to 17<sup>th</sup> of June 2021/ NASA GOFC-GOLD and START. During the workshop Prof. Diofantos Hadjimitsis (co-leader of MedRIN and Coordinator of the EXCELSIOR H2020 Teaming Project) presented the EXCELSIOR H2020 Teaming Project and its main research and Innovation topics in earth observation (e.g. Climate changes, agriculture, water resources management, land use/land cover, forestry, disaster risk reduction: floods, fires, landslides etc). He also presented some of the hot topics in Earth Observation as country representative for ERATOSTHENES Centre of Excellence.



Vincent Ambrosia from NASA (Coordinator of MedRIN from USA) and member of the Advisory Board of the EXCELSIOR H2020 Teaming Project presented EXCELSIOR H2020 Teaming Project during the breakout session, the focus groups of the MedRIN as well as the potential use of the project for the benefit of the MedRIN members. The outcome of the meeting was that MedRIN will collaborate with the EXCELSIOR H2020 Teaming Project and the ERATOSTHENES Centre of Excellence for trainings, capacity building, sharing infrastructure and the organization of events.





## Meeting with the Assistant Public Affairs Officer, Mr. Deje Holmes and Mr. Spyros Charitou of the U.S. Embassy Cyprus

28<sup>th</sup> of June 2021



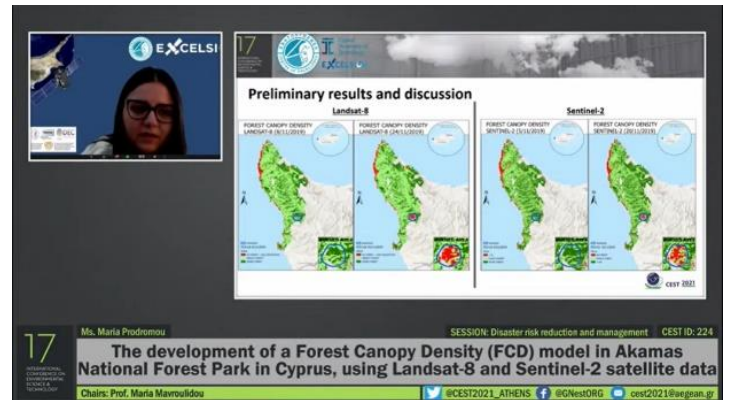
On July 28<sup>th</sup>, 2021, Assistant Public Affairs Officer, Mr. Deje Holmes, Mr. Spyros Charitou of the U.S. Embassy of Cyprus, together with Prof. Andreas Anayiotos and Dr. Kyriacos Themistocleous, members of EXCELSIOR H2020 Teaming Project, had a productive meeting regarding the establishment of a MAKERSPACE in Earth Observation and Geographical Information Systems for the Digital Innovation Hub and its collaboration with the CUTing Edge. An annual program of dissemination and training/entrepreneurship culture activities will take place for students, researchers and young innovators. In addition, they discussed entrepreneurial and business cooperation opportunities between the ERATOSTHENES Centre of Excellence and the United States for the benefit of the Innovation and Entrepreneurship ecosystem in Cyprus.

# Presentations at the 17<sup>th</sup> International Conference on Environmental Science and Technology (CEST2021)

1<sup>st</sup> – 4<sup>th</sup> of September 2021

Our team participated with 4 presentations at the 17<sup>th</sup> International Conference on Environmental Science and Technology-CEST2021, which was held from the 1<sup>st</sup> to the 4<sup>th</sup> of September 2021, organized by Global NEST. Ms. Maria Prodromou and Ms. Eleni Loulli, members of EXCELSIOR H2020 Teaming presented the following:

- Environmental Monitoring from Space & Geoinformation through the EXCELSIOR H2020 Teaming Project by Eleni Loulli
- Intercomparison of satellite and ground-based precipitation in the area of Cyprus by Ms. Loulli
- The development of a Forest Canopy Density (FCD) model in Akamas National Forest Park in Cyprus, using Landsat 8 and Sentinel 2 satellite data by Ms. Prodromou
- Implementation of Maritime Spatial Planning (MSP) in Cyprus focusing on the European MSPs' good practices by Ms. Prodromou





## Presentation of EXCELSIOR H2020 Teaming Project and FPCUP Projects during the freshers' week 8<sup>th</sup> of September 2021

On the 8<sup>th</sup> of September 2021, members of our team, Dr. Christiana Papoutsou and Ms. Despina Makri gave a presentation about the EXCELSIOR H2020 Teaming Project and the Framework Partnership Agreement on Copernicus User Uptake (FPCUP) during the freshers' week at the Cyprus University of Technology.



## Presentations at SPIE Remote Sensing 2021 13<sup>th</sup> - 17<sup>th</sup> of September 2021

ID	Satellite	Sensing Date	No. of Calibration points	Calibration Equation
5	SPOT 7	25/12/2017	1039	$y = 164.53x + 168.82$

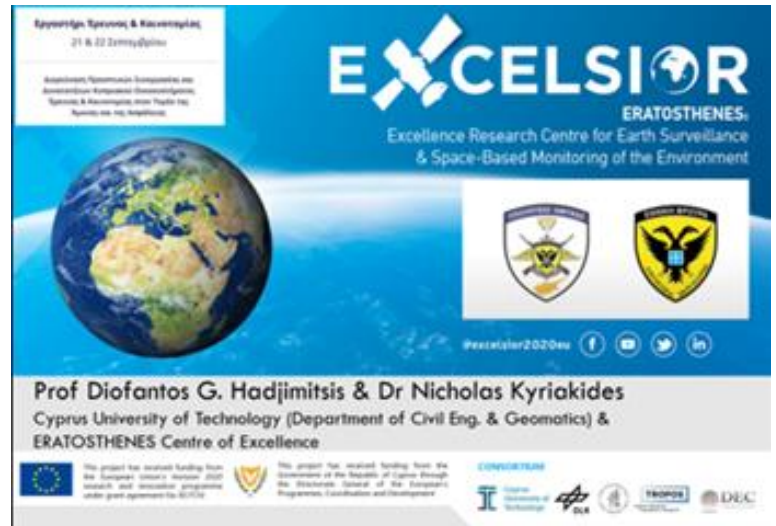
Our team participated with 4 presentations at SPIE Remote Sensing 2021 which was held on the 13<sup>th</sup> to 17<sup>th</sup> of September 2021:

- Investigating the past using remote sensing techniques, by Dr. Kyriacos Themistocleous
- Satellite-derived bathymetry for shallow coastal waters in Cyprus, by Mr. Evagoras Evagorou
- Monitoring aquaculture fisheries using Sentinel -2 images by identifying plastic fishery rings, by Dr. Kyriacos Themistocleous
- Detecting changes in vegetation and climate that serve as early warning signal on land degradation using remote sensing: a review, by Mr. Filippos Eliades

## Presentation about the EXCELSIOR H2020 Teaming Project at the Research and Innovation Workshop, organized by the Ministry of Defence

21<sup>st</sup> – 22<sup>nd</sup> of September 2021

Our team member, Dr. Nicholas Kyriakides gave a presentation about the EXCELSIOR H2020 Teaming Project at the Research and Innovation Workshop, organized by the Ministry of Defence. With this workshop, the Ministry aimed at exploring the prospects of cooperation with the Cypriot ecosystem in the field of Defence and Security.



## Participation with a virtual booth at the European Researchers' Night 2021

24<sup>th</sup> of September 2021



The ERATOSTHENES Centre of Excellence, the EXCELSIOR H2020 Teaming Project and the Department of Civil Engineering and Geomatics of the Cyprus University of Technology, participated at the European Researcher's Night organized by the Research and Innovation Foundation in Cyprus.

The "Researcher's Night" is an event aimed at familiarizing the public with the world of science and research and at the same time strengthening the public image of researchers, as well as highlighting the important role they play in society. Our team participated with the virtual booth: "The Green Age through Space Technologies: Earth Observation & Geoinformatics".



# Poster presentation at the 15<sup>th</sup> International Conference on Meteorology, Climatology and Atmospheric Physics (COMECAP2021)

26<sup>th</sup> – 29<sup>th</sup> of September 2021

At the 15<sup>th</sup> International Conference on Meteorology, Climatology and Atmospheric Physics – COMECAP2021, our team member Dr. Argyro Nisantzi presented a poster entitled “The importance of Atmospheric Remote Sensing in the EMMENA region”. The poster presented details on the mission of the EXCELSIOR H2020 Teaming Project and how the lidar system will become a key component within the project coordinated by the Cyprus University of Technology.

## Presentation of our joint work at the 1<sup>st</sup> DESIS User Workshop 28<sup>th</sup> September – 1<sup>st</sup> October 2021

Monitoring underwater cultural heritage sites: the submerged harbours of Hipponion (Italy) and Amathus (Cyprus)

Daniele Cerra<sup>1</sup>, Peter Gege<sup>1</sup>, Evagoras Evagorou<sup>2</sup>, Athos Agapiou<sup>2</sup>, Raquel de los Reyes<sup>1</sup>

- 1. German Aerospace Center (DLR)
- 2. Cyprus University of Technology (CUT)



At the 1<sup>st</sup> DESIS User Workshop, organized by DLR, a joint work on Cultural Heritage by members of the EXCELSIOR H2020 Teaming Project was presented. The work was a collaboration between Dr. Daniele Cerra (DLR), Dr. Athos Agapiou and Mr. Evagoras Evagorou (CUT).

# Invited talks

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

Date: 15<sup>th</sup> of June 2021

Topic: Water Resources Management

Speakers: Kostas Aristeidou, Dr Athanasios Loukas, Alina Vizireanu, Dr Catalin Stefan, Dr Gordana Jakovljevic

Link:

<https://www.youtube.com/watch?v=JcnPd03OX38&t=313s>

**Water Resources Management**  
EXCELSIOR Webinar

**Kostas Aristeidou**  
Head of Hydrology, Meteorology and Climate Services  
Director of the National Centre for Hydrological Services  
Director of the National Centre for Hydrological Services  
Department of Cyprus

**Dr Athanasios Loukas**  
Associate Professor of Hydrology  
Department of Agricultural Meteorology  
Faculty of Agriculture, University of Cyprus

**Alina Vizireanu**  
Senior Researcher  
Department of Hydrology and Meteorology  
Romania

**Dr Catalin Stefan**  
Senior Researcher  
Department of Hydrology and Meteorology  
Romania

**Dr Gordana Jakovljevic**  
Senior Researcher  
Department of Hydrology and Meteorology  
Croatia

**EXCELSIOR**

Tuesday June 15, 2021  
10:30-11:30 EEST  
7:30-11:30 UTC

Registrations:  
<http://tiny.cc/WebinarWRM>

Date: 23<sup>rd</sup> of June 2021

Topic: Developing quantitative InSAR tools for environmental monitoring

Speaker: Dr Philippa Mason.

Link:

<https://www.youtube.com/watch?v=U1d8rD2XRyY>

**USGS Epicenter**

**EXCELSIOR**

ERATOSTHENES: EXcellence Research Centre for Earth Surveillance and Space-Based Monitoring Of the Environment  
[www.excelesior2020.eu](http://www.excelesior2020.eu)

June 23, 2021  
Wednesday  
11:00-12:00 EEST

ZOOM

**Invited Talk**  
Developing quantitative InSAR tools for environmental monitoring

**Dr Philippa Mason**  
Imperial College London  
Imperial College  
London

CONSORTIUM: Cyprus University of Technology, DLR, TROPOS, DEC

REGISTRATION  
[http://tiny.cc/EXCELSIOR\\_PM](http://tiny.cc/EXCELSIOR_PM)

\*The talk will be in English

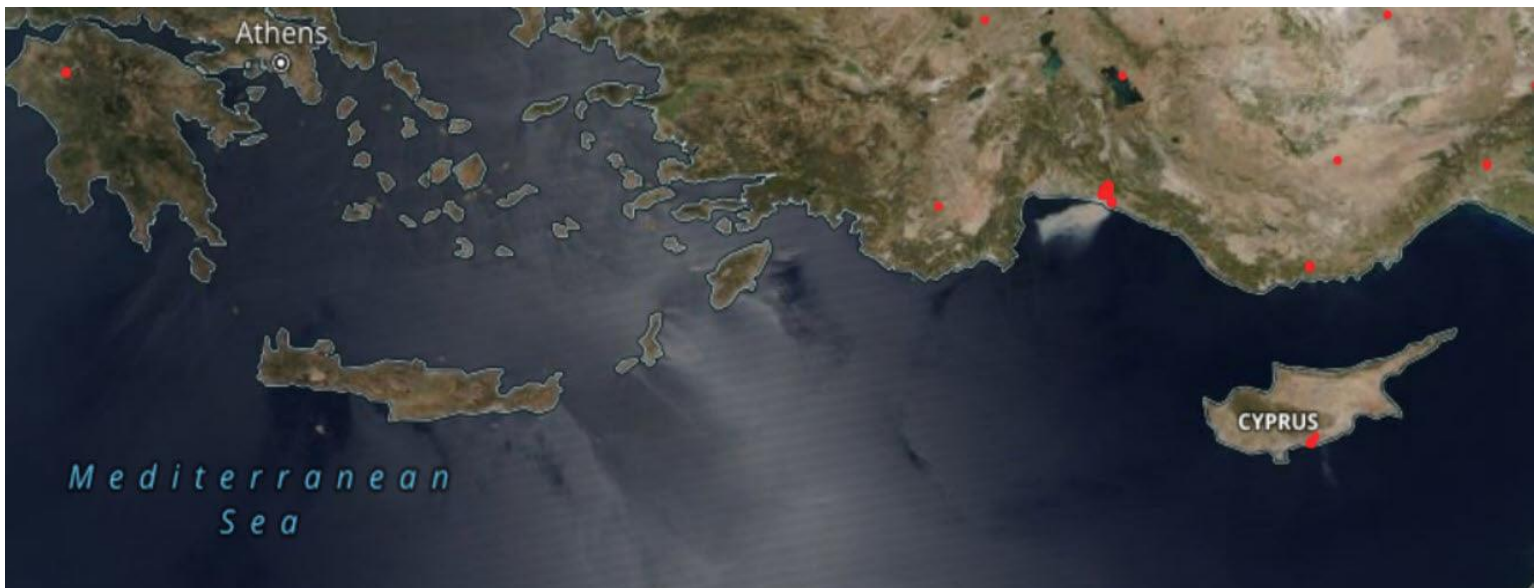


## Our Research

### Fire Detection

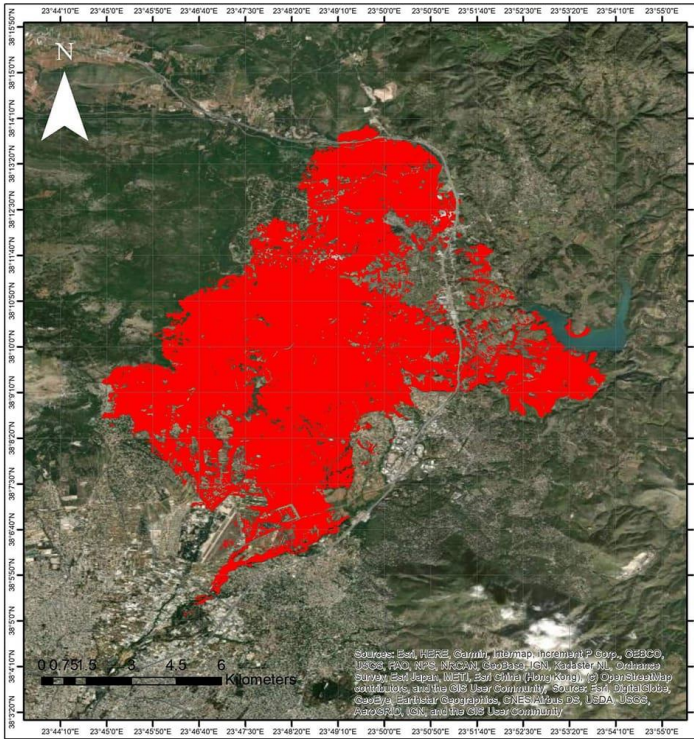


The ERATOSTHENES Centre of Excellence recorded three fires in Cyprus on the 7<sup>th</sup> of July 2021, by using NASA/NOAA satellite images. Fires were identified in the Pentakomo area, the Kalavastos area and in Analionta village near Nicosia. Two large fires were also detected in Greece, at Elekistira and Drosia villages in Achaia, near Patras, as well as a large fire in South Turkey.

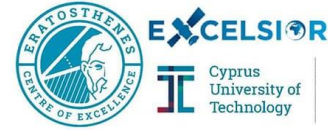




The ERATOSTHENES Centre of Excellence recorded the burned area in Varybobi. Using Copernicus Sentinel-2 satellite data, the burned area was estimated at 6788 hectares.



**Πυρκαγιά στην περιοχή Βαρυμπόμπη (Ελλάδα)**  
Wildfire in Varybompi area (Greece)  
8/8/2021



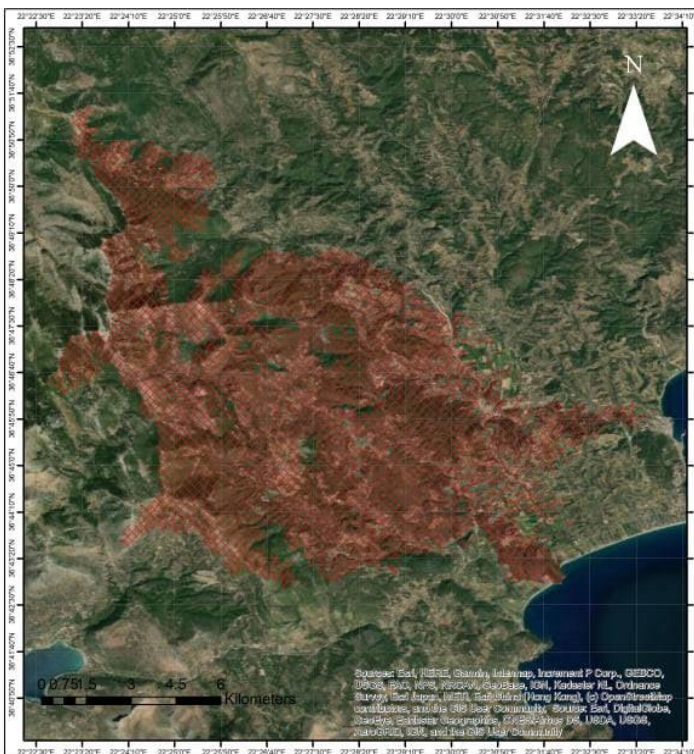
Η εκτίμηση της πυρκαγιάς πραγματοποιήθηκε  
χρήση δορυφορικών δεδομένων  
Sentinel-2 πριν και μετά την πυρκαγιά,  
του προγράμματος Copernicus.

The burned area was estimated using  
Sentinel-2 data of Copernicus programme  
before and after the fire event

**Εκτιμώμενη καμένη έκταση:~6788ha**

**Estimated burned area:~6788ha**

The ERATOSTHENES Centre of Excellence recorded the burned area in East Mani. Using Copernicus Sentinel-2 satellite data, the burned area was estimated at 10204 hectares.



**Πυρκαγιά στην περιοχή Ανατολική Μάνη**  
Wildfire in East Mani (Greece)  
8/8/2021



Η εκτίμηση της πυρκαγιάς πραγματοποιήθηκε  
χρήση δορυφορικών δεδομένων  
Sentinel-2 πριν και μετά την πυρκαγιά,  
του προγράμματος Copernicus.

The burned area was estimated using  
Sentinel-2 data of Copernicus programme  
before and after the fire event

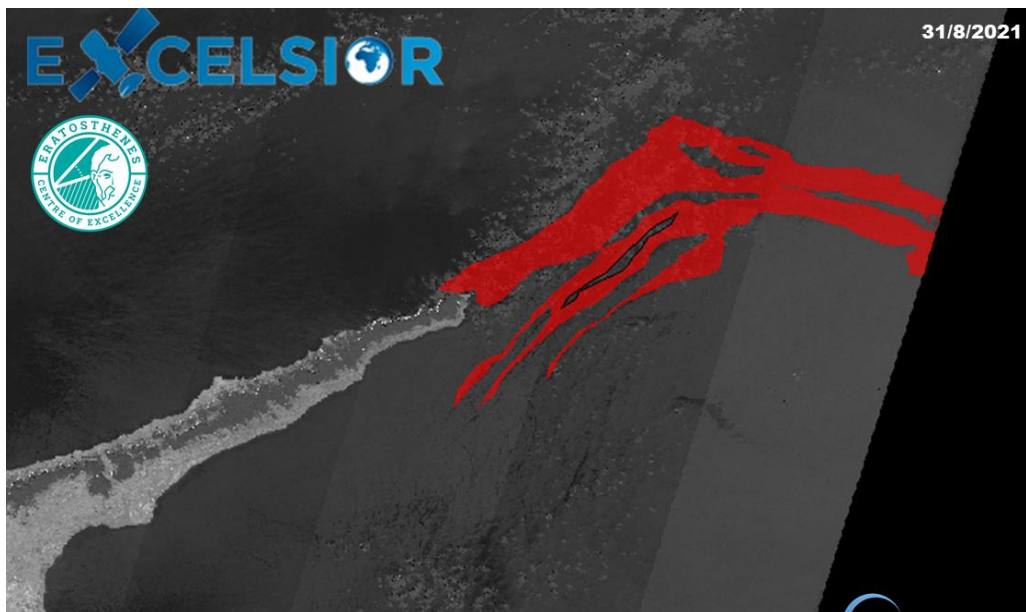
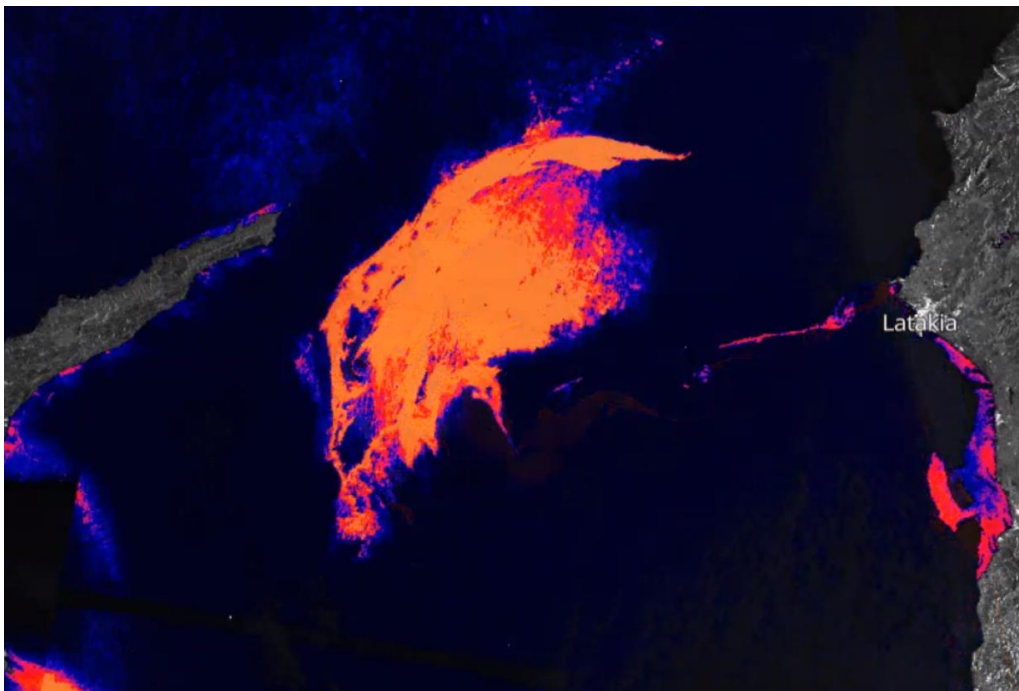
**Εκτιμώμενη καμένη έκταση:~10204ha**

**Estimated burned area:~10204ha**



## Oil spill detection

The ERATOSTHENES Centre of Excellence was monitoring the oil spill that originated from Syria's largest refinery and occurred on the 31<sup>st</sup> of August 2021. The oil spill was spotted by Copernicus EU Sentinel-1 satellite and was observed to be drifting from the coast of Syria towards Cyprus. Copernicus EU Sentinel 2 satellite images also showed that the oil spill had reached the shores of Rizokarpaso.



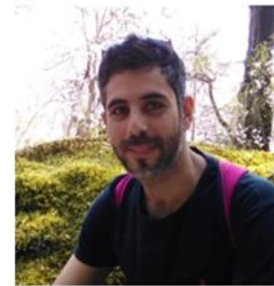
## EXCELSIOR in media

### Dr. Konstantinos Panagiotou at Logos radio

11<sup>th</sup> of May 2021

Our team member, Dr. Konstantinos Panagiotou, talked about the evolution of climate change in the wider region of the Eastern Mediterranean and the challenges that Cyprus encounters in relation to water resources management. He gave an overview of the research activities that are implemented to address these challenges and the importance of remote sensing for the retrieval of big data, referring also to the satellite ground receiving station and the ground-based atmospheric remote sensing station of the ERATOSTHENES Centre of Excellence. Dr. Panagiotou explained how we process remote sensing data to draw useful conclusions about various phenomena. He also addressed the importance of groundwater monitoring and quality control and the need for further development of innovative techniques to optimize water resources management.

The interview can be accessed [here](#).



### Dr. Nicholas Kyriakides on “The human agenda” podcast

27<sup>th</sup> of September 2021

Our team member, Dr. Nicholas Kyriakides, discussed seismic engineering design for public safety, along with Prof. Marc Bonello on "The human agenda" podcast, on September 27th, 2021. The purpose of the podcast was to bring awareness about the importance of designing buildings to withstand earthquakes, so that the public, tenants, building owners, authorities, as well as insurers, appreciate the severe socio-economic impact of earthquakes on properties in terms of loss of life, cost, damage, down-time, and sustainability.

The podcast can be accessed [here](#).



EP 13

Marc Bonello &  
Nicholas Kyriakides





# MoU Agreements of the ERATOSTHENES Centre of Excellence

## Limassol Chamber of Commerce & Industry

On April 5<sup>th</sup>, 2021, a Memorandum of Understanding was signed between the ERATOSTHENES Centre of Excellence and the Limassol Chamber of Commerce & Industry. The purpose of the meeting was to sign an agreement between the two organizations and learn more about each other's fields of interest for future collaborations. In the context of cultivating relations between the two bodies and the joint effort for mutual understanding and promotion of scientific and educational cooperation, the protocol aims to expand scientific, research, educational and other cooperation between the two bodies.

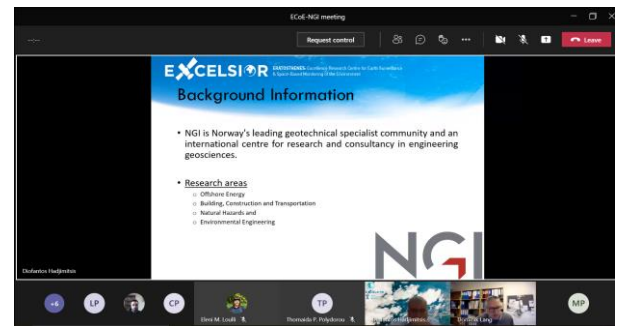


## Norwegian Geotechnical Institute (NGI)

On May 10<sup>th</sup>, 2021, a Memorandum of Understanding was signed between the Norwegian Geotechnical Institute (NGI) and the ERATOSTHENES Centre of Excellence.

The Memorandum of Understanding covers the following areas:

- Mutual exchange of faculty and students for shorter or longer work visits
- Mutual participation in research projects and collaboration in future R&D proposals
- Mutual exchange of information, scientific documentation and publications
- Other academic exchanges and mutual involvement formally recognized by both, ERATOSTHENES Centre of Excellence and NGI
- Thesis co-tutorship
- Mutual exchange of measured data of common observations of earth observation data



## Cyprus Research and Innovation Center (CyRIC)

A Memorandum of Understanding was signed on Monday, 10<sup>th</sup> of May 2021 between the Cyprus Research and Innovation Center (CyRIC) and the ERATOSTHENES Centre of Excellence. 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 to expand scientific, research, educational and other cooperation between the two organisations.



## Cellock

A Memorandum of Understanding was signed on the 14<sup>th</sup> of May 2021 between the Cellock and the ERATOSTHENES Centre of Excellence.

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 promoting scientific and educational cooperation.



## MOTUS

A Memorandum of Understanding was signed on the 14<sup>th</sup> of May 2021 between the MOTUS and the ERATOSTHENES Centre of Excellence. The Memorandum of Understanding between the two organizations seeks to foster mutual understanding and promote joint scientific and educational activity between them.





## University of Malta

A Memorandum of Understanding was signed on the 27<sup>th</sup> of July 2021 between the University of Malta and the ERATOSTHENES Centre of Excellence.

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 promoting scientific and educational cooperation.



## Geofem Ltd.

A Memorandum of Understanding was signed on the 27<sup>th</sup> of July 2021 between the Geofem Ltd. and the ERATOSTHENES Centre of Excellence.

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 to expand scientific, research, educational and other cooperation between the two organisations.



# Recent selected publications

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

### Book section

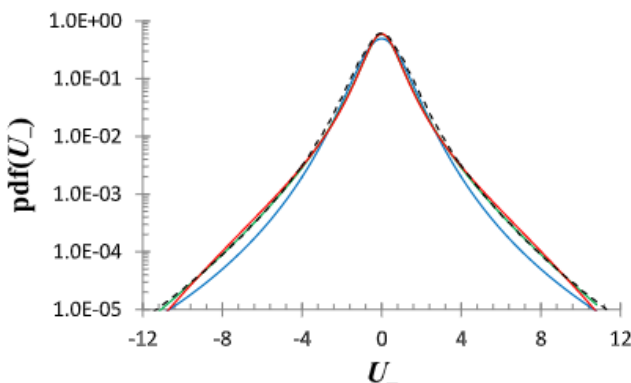
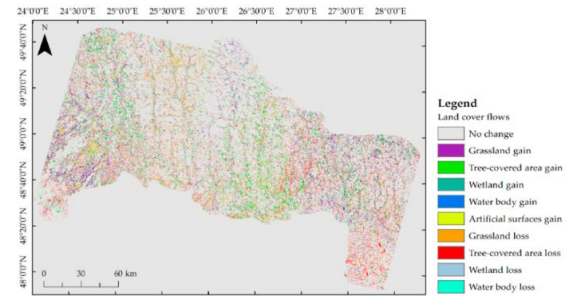
Neocleous, K., Polydorou, T., & Pilakoutas, K. (2021). Reuse of tire constituents in concrete. In *Tire Waste and Recycling* (pp. 547-564). Academic Press.

<https://doi.org/10.1016/B978-0-12-820685-0.00002-8>

### Journals

Popov, M., Michaelides, S., Stankevich, S., Kozlova, A., Piestova, I., Lubskiy, M., et al. (2021) 'Assessing long-term land cover changes in watershed by spatiotemporal fusion of classifications based on probability propagation: The case of Dniester river basin', *Remote Sensing Applications: Society and Environment*, 22, p. 100477.

<https://doi.org/10.1016/j.rsase.2021.100477>



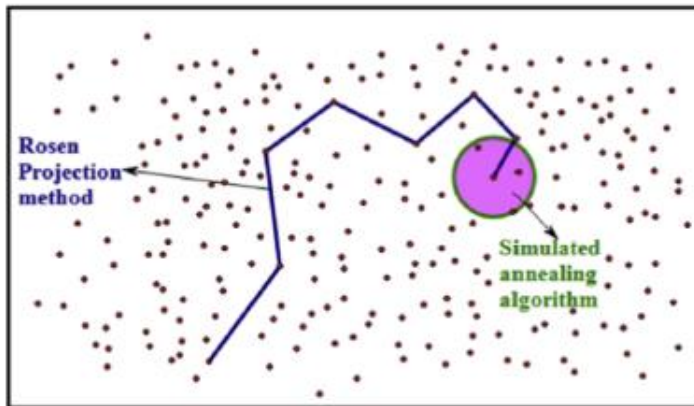
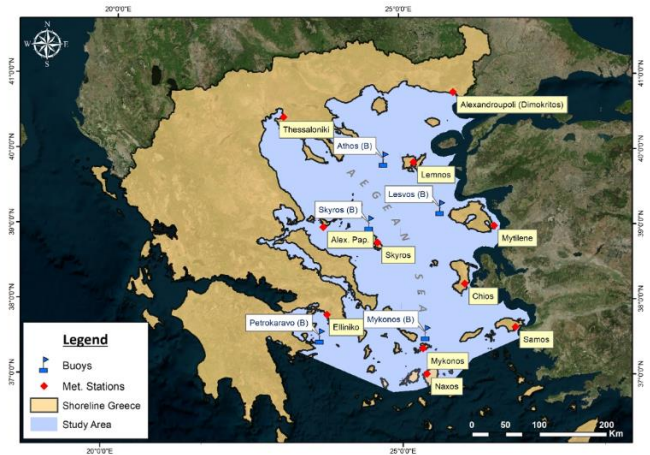
Gravanis, E., Akylas, E., Michailides, C., & Livadiotis, G. (2021). Superstatistics and isotropic turbulence. *Physica A: Statistical Mechanics and its Applications*, 567, 125694.

<https://doi.org/10.1016/j.physa.2020.125694>



Katikas, L., Dimitriadis, P., Koutsoyiannis, D., Kontos, T., & Kyriakidis, P. (2021). A stochastic simulation scheme for the long-term persistence, heavy-tailed and double periodic behavior of observational and reanalysis wind time-series. *Applied Energy*, 295, 116873.

<https://doi.org/10.1016/j.apenergy.2021.116873>

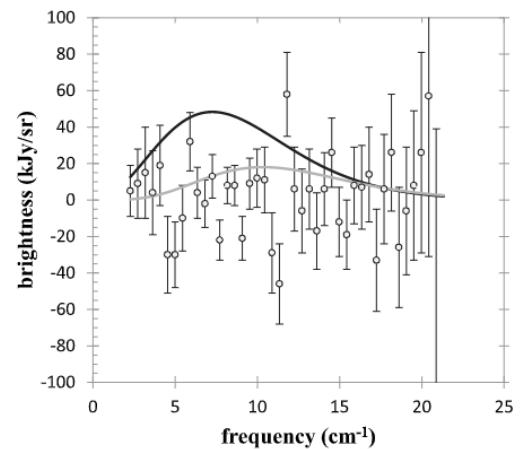


Milidonis, K., Blanco, M. J., Grigoriev, V., Panagiotou, C. F., Bonanos, A. M., Constantinou, M., ... & Asselineau, C. A. (2021). Review of application of AI techniques to Solar Tower Systems. *Solar Energy*, 224, 500-515.

<https://doi.org/10.1016/j.solener.2021.06.009>

Gravanis, E., & Akylas, E. (2021). Blackbody radiation, kappa distribution and superstatistics. *Physica A: Statistical Mechanics and its Applications*, 578, 126132.

<https://doi.org/10.1016/j.physa.2021.126132>



## Coming up in the 5<sup>th</sup> issue:

- GIS day for EXCELSIOR
- ERATOSTHENES Centre of Excellence becomes a member of the EXCELSIOR consortium
- EXCELSIOR members meet with the Minister of Climate Change and Civil Protection of the Hellenic Republic, Dr. Christos Stylianides



# Get in touch

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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Cyprus University of Technology  
&  
**ERATOSTHENES** Centre of Excellence



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Government of the Republic of Cyprus through  
the Directorate General of the European's  
Programmes Coordination and Development

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