

International Highlights 2013 – 2018

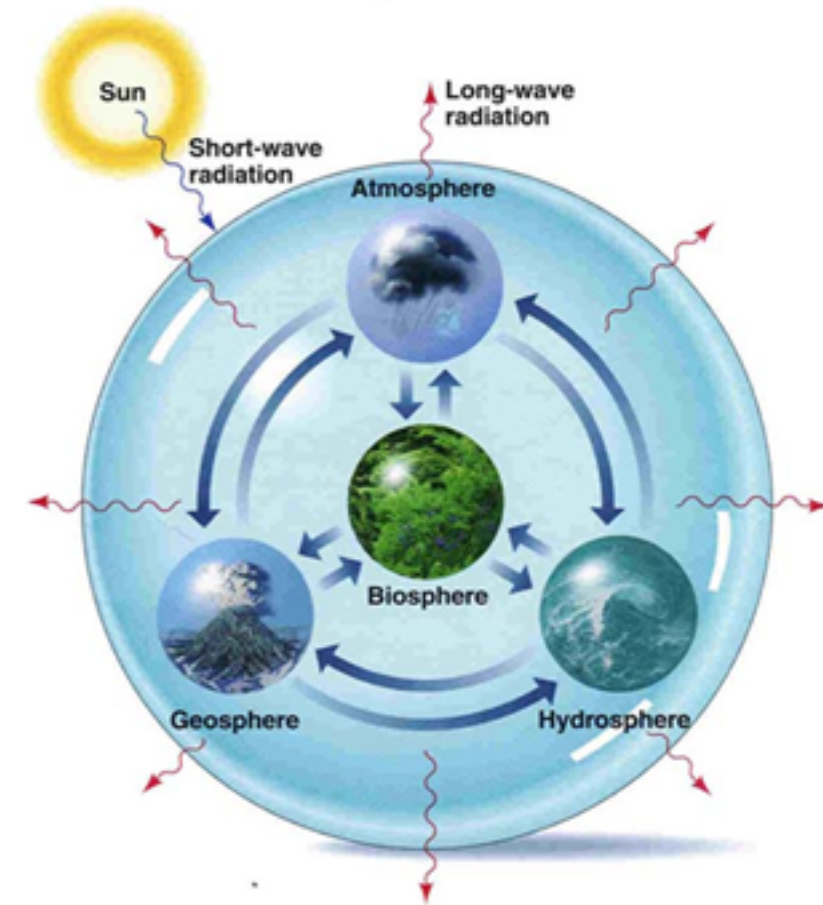
Institute of Earth Sciences



Instituto de Ciências da Terra
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ICT researches the Earth as a whole system



Towards the United Nations Sustainability Goals



Field training about the use of UAVs (drones) applied to coastal management (Brazil).

Organization of meetings and thematic sessions

- 1st Iberian Meeting on Aerosol Science and Technology, 2013, Évora
- European Geosciences Union General Assembly, 2013, 2018, Austria
- 4th European Conference on Permafrost, 2014, Évora
- XII Congress of the International Association of Engineering Geology and the Environment, 2014, Italy
- 2nd International Conference on African & Arabian Geoparks, 2014, Senegal
- 4th Workshop on Parameterisation of Lakes in Numerical Weather Prediction and Climate Modelling, 2015, Évora
- CERN-JINR European School of High-Energy Physics, 2015, Évora
- Congress on Geological Heritage Inventories: Achievements, Challenges and Perspectives, 2015, France
- 8th International Symposium ProGEO on the Conservation of the Geological Heritage, 2015, Iceland
- International Workshop on Urban Geomorphological Heritage, 2016, Italy
- World Congress on Geochemistry, 2017, USA

*Meeting of the International Committee for Coal and Organic Petrology (India).
The archives of this organization are under the ICT supervision.*

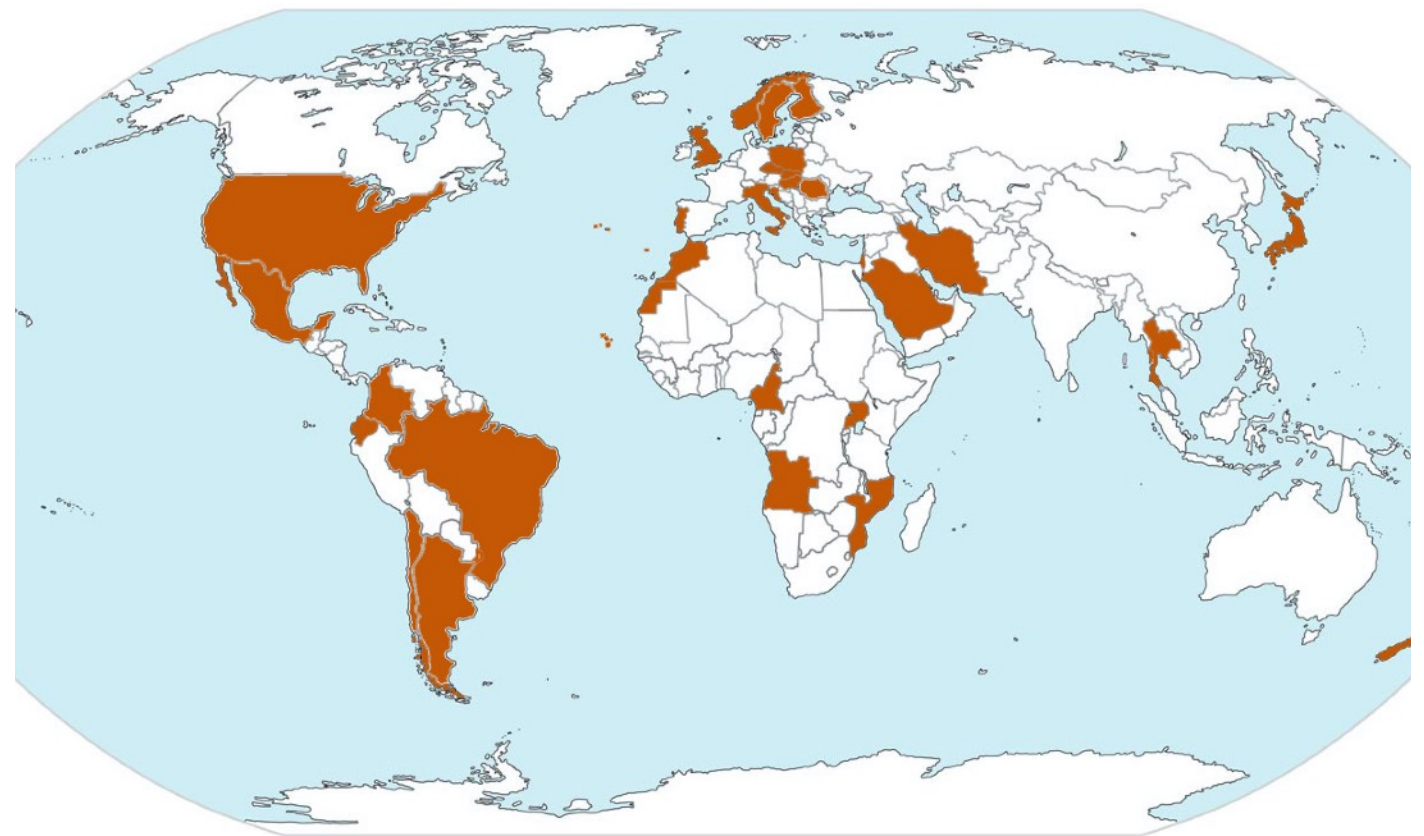


- 5th Workshop on Parameterization of Lakes in Numerical Weather Prediction and Climate Modelling, 2017, Germany
- 14th European Geoparks Conference, 2017, Azores

- 27th Colloquium of African Geology and 17th Conference of the Geological Society of Africa, 2018, Aveiro
- 9th International Symposium ProGEO on the Conservation of the Geological Heritage, 2018, Poland

Organization of advanced training

- EGU Training School "Geoheritage management: conservation, promotion and monitoring", 2018, Braga
- Workshops on Geoheritage, Geoconservation and Geoparks, Brazil (2014, 2015); México (2013, 2017); Spain (2014, 2015); Iran (2016); Colombia (2018), Morocco (2018)
- 2nd Alqueva Summer School on Atmospheric and Inland Water Sciences, 2018, Évora
- Online course "Geoparks" (since 2016)
- Short Summer School on Atmospheric Physics, 2016, Évora
- IDPASC Workshop on "Space Particles and Earth", 2015, Évora



Home countries of participants in advanced training organised by the ICT (Master and PhD degrees, intensive courses, online courses).

Partnerships and cooperation with international bodies

- Aerosols, Clouds and Trace gases Research Infrastructure – ACTRIS
- British Antarctic Survey
- Centre National de Recherche Appliquée en Génie Parasismique (Algeria)
- Chilean Antarctic Institute
- European Aerosol Research Lidar Network – EARLINET
- European Association for the Conservation of Geological Heritage – ProGEO
- European Federation of Geologists – Panel of Experts of Education
- European Geosciences Union – Division on Seismology
- European Geoparks Network – Advisory Committee
- Global Environmental Monitoring Network – uRADMonitorNet
- International Arctic Science Committee
- International Atomic Energy Agency – Panel of Experts
- International Association for Promoting Geoethics
- International Association of Hydrogeologists
- International Committee for Coal and Organic Petrology
- International Geoscience Education Organisation
- International Mine Water Association
- International Network of Ground-based Microwave Radiometers

Field mission during a UNESCO World Heritage evaluation (France).



11 SUSTAINABLE CITIES AND COMMUNITIES



- International Sea Bed Authority
- International Union of Conservation of Nature – Geoheritage Specialist Group of WCPA and World Heritage Programme
- International Union of Geological Sciences – Task Group on Geohazards and Working Group on Geoheritage Assessment
- Korea Polar Research Institute

- Management Committee of the Cost Action OC - 2016 - Tools for Forensic Science
- National Geographic Society (USA)
- North African Group for Earthquake and Tsunami Studies
- UNESCO – Evaluation Team of Global Geoparks



Panel of Experts of the International Atomic Energy Agency (IAEA).

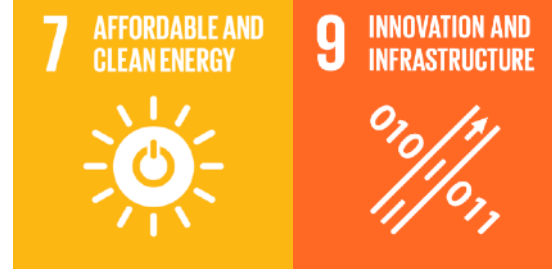


Geoelectric study of permafrost (Antarctica).

Main R&D Projects

- A European network for a harmonised monitoring of snow for the benefit of climate change scenarios, hydrology and numerical weather prediction (COST Action ES1404)
- Assessment of Possible Recycling Directions of Heavy & Rare Metals Discovered from Combustion Waste Products (ERA-MIN 2, H2020 EU)
- Atmospheric Electricity Network: coupling with the Earth System, climate and biological systems (COST Action CA15211)
- Building capacity in renewable and sustainable energy for Libya (ERASMUS+)
- Coal char as a substituting material of natural graphite in green energy technologies (ERA-MIN 2, H2020 EU)
- Design of a product for substitution of phosphate rocks (ERA-MIN 2, H2020 EU)
- Development of exploitation, environmental and energy techniques in metallic mining (Interreg EU Project)
- Development of new models for the genesis of Rare Metal (W, Nb, Ta, Li) Ore deposits from the European Variscan Belt and valorization of low grade and fine grained ore and mine tailings (ERA-MIN 2, H2020 EU)
- Flexible And Mobile Economic Processing Technologies (H2020 EU)
- Fostering a Next Generation of European Photovoltaic Society through Open Science (H2020 EU)
- Geoethics Outcomes and Awareness Learning (ERASMUS+)

Solar panels in Spain integrated in the MASLOWATEN Project, one of the thirteen H2020 EU projects with ICT coordination/participation.



- Geological heritage of the state of São Paulo: identification, conservation and valuing of geosites of scientific value with national and international relevance (Ministry of Science, Technology, Innovation and Communications of Brazil)
- Improve Resource Efficiency and Minimize Environmental Footprint National Institute for Metals and Radioactive Resources (ERA-MIN 2, H2020)
- Improving Allergy Risk Assessment Strategy for new food proteins – ImpARAS (COST Action FA1402)
- Inputs of metals and sulfate generated by acid mine drainage into the water dams of the Iberian Pyrite Belt (Regional Government of Andalusia, Spain)
- Integrating National Research Agendas on Solar Heat for Industrial Processes (H2020 EU)
- Lightweight Integrated Ground and Airborne Hyperspectral Topological Solution (ERA-MIN 2, H2020 EU)
- Maghreb-EU research staff exchange on geodynamics, geohazards, and applied geology in north-west Africa (Marie Curie Action FP7)
- Market Uptake of an Innovative Irrigation Solution based on Low Water-Energy consumption – MASLOWATEN (H2020 EU)
- MULTI-modal Imaging of FOREnsic SciEnce Evidence - tools for Forensic Science (COST Action 16101)
- Multi Scale Laboratories – European Plate Observing System (H2020 EU)
- New StOrage Latent and sensible concept for high efficient CSP Plants – NEWSOL (H2020 EU)



Monitoring of volcanic soils (Chile).

1 NO POVERTY



2 ZERO HUNGER



- Open and smart innovation in the EUROACE (Interreg EU Project)
- Performance and Reliability of Photovoltaic Systems: Evaluations of Large-Scale Monitoring Data (COST Action CA16235)
- Predictable Flexible Molten Salts Solar Power Plant – PreFlex MS (H2020 EU)
- Science and Management of Intermittent Rivers and Ephemeral Streams – SMIRES (COST Action 15113)
- Study of mercury cycle in Colombian artisanal (small scale) gold mining (Ministry of Mines of Colombia)
- Towards operational ground based profiling with ceilometers, doppler lidars and microwave radiometers for improving weather forecasts – TOPROF (COST Action ES1303)
- Uncovering the Mediterranean salt giant – MEDSALT (COST Action 15103)
- Use of sediments in reservoirs as nutrients for the fertilization of agricultural soils in the Dominican Republic (Ministry of Higher Education, Science, and Technology of the Dominican Republic).

Fieldwork for the monitoring of water quality (Cape Verde).



Awards received by young ICT members

- D. Canavarro – Mário Quartim Graça Prize, House of Latin America and Santander Bank, 2017
- M. Potes – Young Scientist Award of the European Meteorological Society, 2015
- M. Santisteban – Best thesis of the year of Huelva University, 2017
- A. Gonçalves – Foundation Ramón Areces Award, 2017

Innovation and patents

- Évora Molten Salt Platform (MoU and ongoing joint management with Deutsches Zentrum für Luft- und Raumfahrt)
- Solar Concentrator Modules Testing Facility (MoU with Fraunhofer ISE, Freiburg, Germany)
- Patent “Turbidity optical sensor for underwater continuous monitoring in-situ marine or fluvial monitoring”, P603.0 PP, 2018

Évora Molten Salt Platform in cooperation with several international companies.



Fieldtrip of the EGU Training School "Geoheritage management: conservation, promotion and monitoring" with 45 participants from 19 countries (Braga)



*ISAC-CNR, Monte Cimone Station (Apennines, Italy)
Participation in the "Aerosols, Clouds, and Trace gases Research Infrastructure Network – ACTRIS"*





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