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The content and opinions expressed within the Newsletter are those of the researchers involved and are not necessarily shared by the Coordinators of CERIS

PRESIDENT'S NOTE

Following the previous edition, in which we reviewed the unit's activities in the exciting year of 2017, this Newsletter intends to highlight ongoing CERIS' works and researchers.

CERIS's excellence strongly depends on the achievements of its individual members, no matter how effectively they work as a team. It is their drive that sets us apart in the Civil Engineering World and European panorama, as internationally recognized rankings consistently demonstrate. This newsletter is our tribute to them with a sincere word of appreciation.

Jorge de Brito

SPOTLIGHT ON

Senior Researcher: Professor Nunes Correia

Francisco Nunes Correia got his PhD in Civil Engineering at Colorado State University. He is Full Professor of Environment and Water Resources at Instituto Superior Técnico. He is founder, former President, and now President of the General Assembly of the Portuguese Water Partnership. Along with his academic career, he was designated for several public positions, including Minister of Environment, Territorial Planning, and Regional Development (2005-2009) and President of the LNEC (2004-2005). He was awarded the degree of Grand Officer of the Order of "Infante D. Henrique". He was consultant of the World Bank in water projects in South America and participated in environmental projects in Macao. He was Coordinator of several European R&D projects, notably EUROWATER and WATER 21. More recently, he collaborated with OECD as a consultant and reviewer in the Water Governance Initiative. He is the author or co-author of 10 books and more than 130 articles, chapters and technical reports on the areas of water, environment and regional development.



EDITORIAL TEAM

Patrícia Ferreira

Clara Pereira

Inês Teotónio

SPOTLIGHT ON

Senior Researcher: Professor Dinar Camotim

Dinar R. Z. Camotim is a Full Professor of Structural Mechanics and Structures at Instituto Superior Técnico (University of Lisbon), where he teaches and has been conducting research on Structural Stability and Analysis and Design of Thin-Walled Structures for the past 30 years, after receiving Master and PhD degrees from the University of Waterloo.

Professor Dinar Camotim:

- Supervised 5 Post-Doctoral, 23 PhD and 28 Master students
- Co-authored 2 books on Structural Stability, 7 book chapters and 630 papers (175 in international journals)
- Delivered 20 keynote lectures in international conferences
- Is Associate Editor of the ASCE Journals of Engineering Mechanics and Structural Engineering, and Editorial Board Member of eight several other international journals
- Is a ASCE-EMI Stability Committee past chair and Member of the ECCS Technical Committees for Stability and Cold-Formed Structures
- Received the APEE Ferry Borges Award in 2008, 2010 and 2013, the ASCE Shortridge Hardesty Award in 2010 and the SSRC Lynn Beedle Award 2018.



Young Researcher: Mariana Simão

Mariana Simão is a researcher at CERIS, who presented her Ph.D. thesis in 2017. She was asked about her plans for the future:

When dealing with the unexpected and with the unpredictable, it's somehow very difficult to follow a strict program from the beginning till the end, so when people ask me "what now?" I have some reservations. But right now I'm working in the project "REDAWN" to improve the energy efficiency of water networks through the installation of innovative micro-hydropower (MHP) technology. I'm studying pump working as turbines (PAT) using CFD models in conjunction with laboratory data for capturing the main features of the PAT behaviour under different operating conditions. Though this is a very exciting project, in a near future other type of networks and converters will be studied and adapted to working in vivo.



AWARDS

Leading Researcher

Prof. **Dinar Camotim** received the **2018 Beedle Award**. It is the highest honour bestowed upon contributing Structural Stability Research Council members. [\(+\)](#)



Best Paper Award

Cristina Matos Silva and Vítor Sousa:
2017 Most Cited Paper Award for Resources, Conservation & Recycling [\(+\)](#)
Paper title: *Evaluation of rainwater harvesting in Portugal: application to single-family residences* [\(+\)](#)

Best PhD Thesis Award

Mariana Simão:
2017 Best PhD Thesis in Applied and Computational Mechanics by APMTAC [\(+\)](#)
Thesis title: *Fluid-structure interaction in pressurized systems*

Innovation Award

J.A. Gonilha, J.R. Correia, F. Branco, J. Barros, J. Sena-Cruz: 3rd place in the **World Innovation in Bridge Engineering Prize 2017** [\(+\)](#)
São Silvestre footbridge: an innovative GFRP-SFRSCC hybrid structural system

Career Award

Prof. **Francisco Nunes Correia** received the **AcquaLive 2018 Career Award**. It celebrates a personality whose life has remarkably contributed for the progress of sustainable management and use of water in Portugal. [\(+\)](#)



Distinguished Reviewers

2017 Outstanding Reviewer Awards

- Miguel Amado:
Journal of Urban Planning and Development
- Carlos Oliveira Cruz:
Journal of Management in Engineering
- Rui Cunha Marques and Miguel Amado:
Sustainability journal

2017 Excellence in Review Award

- Jorge de Brito:
Waste Management journal

Scientific Award



Luís Evangelista: 2nd place in the **IPL-CGD 2018 Scientific Awards**, engineering and technology area [\(+\)](#)

Elected member

Rita Bento: member of the Executive Committee of the **European Association for Earthquake Engineering** [\(+\)](#)

R&D PROJECTS

The following Research Projects (FCT Funded) have been funded in the last FCT call:

|  Hydraulics | | CERIS PI |
|---|--|----------------------|
| HORTO AQUAM SALUTAREM: Water wise management in gardens in the early modern period | | Ana Duarte Rodrigues |
| IMiST: Improve mixing in reservoirs for safer water supply | | Dídia Isabel Covas |
| RiverCure: Curating and assimilating crowdsourced and authoritative data to reduce uncertainty in river flow modelling | | Rui M.L. Ferreira |
| WinTherface: Mass exchange driven by wind and temperature in lake-wetland interfaces | | Ana Ricardo |
|  Structures and geotechnics | | CERIS PI |
| BIOSOIL: Biological treatment of soils: development of tools to monitor the application and to predict changes in the hydro-mechanical properties of these materials | | Rafaela Cardoso |
| CEN-DynaGeo: Coupling of Experimental and Numerical Approaches in the Characterization of the Dynamic Properties of Multiphase Geomaterials | | Dragos Moldovan |
| DEEPCOOL: Renewable heating and cooling of underground areas | | Peter Bourne-Webb |
| HiPerSlab: Enhancement of the structural behaviour of flat slabs under cyclic and seismic actions through the rational use of high performance fibre reinforced concrete | | António Ramos |
| PROTEDES: Protection of strategic buildings against explosions | | Válter Lúcio |

R&D PROJECTS

The following Research Projects (FCT Funded) have been funded in the last FCT call:



Studies on construction

CERIS PI

| | |
|--|----------------------|
| BESMaintenance_LowerRisks: Buildings' Envelope SLP-based Maintenance: reducing the risks and cost for owners | Ana Silva |
| DecarbonCrete: Decarbonation of the Planet through Concrete – Implementation of the Paris Agreement | Luís Evangelista |
| EcoComposite: Development of eco-efficient bio-composites for structural applications in civil engineering | Mário Garrido |
| EcoHybB: Eco-efficient hydraulic binders produced from waste of cementitious materials | José A. Bogas |
| FireFloor: Fire Behaviour of GFRP Composite Panel for Building Floors Rehabilitation | João Pedro Firmo |
| GENESIS: Green roofs/walls Environmental Economic and Social Savings | Cristina Matos Silva |
| NanoCStoneHh: Innovative nanocomposites for the conservation and consolidation of carbonated stones in built heritage | Ana Paula Pinto |
| RESIST-2020: Seismic Rehabilitation of Old Masonry-Concrete Buildings | João Ferreira |
| RinoPolyCrete: Recycled Inorganic Polymer Concrete: Towards a cement-free and completely recycled concrete | Jorge de Brito |
| WGB_Shield: Protection of buildings facades of in cities revitalization. Triple resistance to water, graffiti and biocolonization in external thermal insulation systems. | Inês Flores-Colen |

R&D PROJECTS

The following Research Projects (FCT Funded) have been funded in the last FCT call:



Transportation systems

CERIS PI

Development of valorisation techniques of recycled materials to promote circular economy in transport infrastructures

Luís Picado Santos



Architecture, urbanism and territory

CERIS PI

MetroGov - Governance in Lisbon Metropolitan Area in a context of conflict, competition and cooperation

Jorge Gonçalves



Environment and water resources

CERIS PI

DroneWater: Using images obtained by drones to support the management of hydric resources

João Nascimento

Agreements for **technical and scientific collaborations** :

Parques de Sintra - Monte da Lua and IST

CERIS Supervisor

Duration

Evaluation of the Seismic Vulnerability of the National Palace of Sintra: identification of structural anomalies and vulnerability factors

Rita Bento and
Ana Paula Flor

18 months (start:
Sept. 2017)

Development of a BIM model for information management and support to projects, works and maintenance of built heritage, based on a Laser Scanner survey

Rita Bento and
Ana Tomé

24 months (start:
Dec. 2017)

Câmara Municipal de Lisboa and IST

Kick-off for the establishment of a **Mobility Lab** involving Lisbon Municipality and IST (joining several IST Research Centres)

R&D PROJECTS

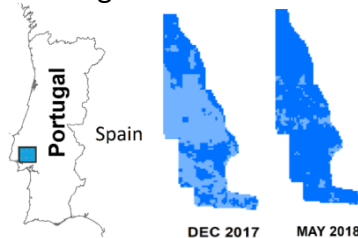
The following Research Projects have been supported by CERIS in last two internal calls

2017th Edition - Transversal projects inter CERIS Groups

AQUIREMOTE (PI: Maria Paula Mendes)

Environment and Water Resources +
Systems and Management +
Structures and Geotechnics

Use of remote sensing data as a support for the EU agri-environmental policies for achieving a good status of groundwater with respect to nitrates. A study to estimate soil moisture content from Sentinel 1 and Sentinel 2 satellite images was conducted based on their products.



Tur&Bairros (PI: Joana Castro Almeida)

Architecture, Urbanism and Territory +
Systems and Management +
Studies on Construction

Tourism & transformation of historic neighbourhoods. The Alfama Case Study. Aims to evaluate the transformations caused by the high tourism growth, namely by the short-term rental accommodation, in historical neighbourhoods.



2018th Edition - Transversal projects inter CERIS Groups

EcoPeak (PI: Isabel Boavida)

Hydraulics +
Environment and Water Resources +
Systems and Management

The main goal of this research is to enhance the knowledge on the impact on cyprinid fish of rapid and frequent variations of discharge downstream hydropower plants due to specific operation rules, and thus contribute to the design and application of mitigation measures.

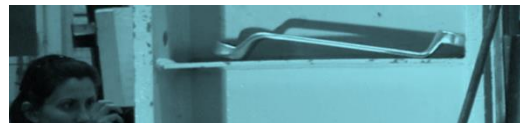


CO₂CONCAP (PI: Rita Nogueira)

Studies on Construction +
Hydraulics +
Structures and Geotechnics



The aim of this project is to improve the CO₂ capture by concrete and other cementitious materials in order to reduce the environmental impact of building industry. An experimental program is scheduled to measure the levels of CO₂ absorption by the fresh cement paste in different conditions. A computational fluid dynamic model will also be applied to the fresh cement paste to try to improve the CO₂ absorption.



EVENTS

5th Bike Ride CERIS

Ride and picnic, Belém, 26th May 2018.



4th EcoCoRe Summer School

Interaction and discussion of future research developments between PhD students, Universidade NOVA de Lisboa, 21th June

ptBIM

Instituto Superior Técnico hosted the 2nd Portuguese Congress of Building Information Modelling (17 and 18th May) to promote technical-scientific discussion [\(+\)](#)



UPCOMING

Betão Estrutural 2018

National meeting (in LNEC) from **7 to 9th November** for divulgation and discussion of the last most recent accomplishments on structural concrete. Debate on the risks and future challenges [\(+\)](#)

XIV RUIITEM Forum

Debate on “Public Policies and Private Initiative”. Instituto Superior Técnico, 11th and 12th June [\(+\)](#)

ICTWS 2018

International Conference of Thin-Walled Structures, Instituto Superior Técnico, from 24th to 27th June [\(+\)](#)



4th INFRARISK Summer School

Students presentation about their on-going research. Instituto Superior Técnico, 18th July [\(+\)](#)

Seminar *Transportes à sexta*

Three seminars (6th April, 11th May and 15th June) on Urban Public Transportation planning hosted by Instituto Superior Técnico [\(+\)](#)



And ...

CERIS OPEN DAY

23rd and 24th October 2018

Don't miss the opportunity to get along with the CERIS community outside the workplace!