XIV MEDECOS
&
XIII AEET meeting

Human driven scenarios for evolutionary and ecological changes

Abstract book

31st January - 4th February 2017
Seville, Spain

XIV MEDECOS & XIII AEET meeting

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ASOCIACIÓN ESPAÑOLA DE ECOLOGÍA TERRESTRE

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EXCELENCIA SEVERO OCHOA

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XIV MEDECOS & XIII AEET meeting

MEDECOS is an international conference organized by ISOMED, the International Society of Mediterranean Ecology, which aims to bring together the scientific community interested in Mediterranean ecosystems. **AEET** is the Spanish ecological society mainly devoted to terrestrial systems.

The origins of MEDECOS date back to March 1971, when an international group of scientists convened in Valdivia, Chile, to discuss their work on Mediterranean-climate ecosystems. MEDECOS has been hosted every 3-4 years in different locations of the five Mediterranean areas of the world (Mediterranean Basin, SW Australia, California, Central Chile and the Cape Region in South Africa). In 2017, MEDECOS will be at the University of Seville (Spain), in the "*Reina Mercedes*" Science Campus, simultaneously with the biennial meeting of the Spanish Association for Terrestrial Ecology (AEET).

The main focus of the joint conference is the ecology and evolution of Mediterranean ecosystems and their species, from plants to animals and also microorganisms. By uniting scientists and students whose research focuses on Mediterranean ecosystems, we expect to gain insights into the similarities and differences in how they function, change and evolve. The conference will also host a regular AEET meeting, thus more general topics on any aspect of ecology will be also considered.

The Conference main topics are:

- Comparative ecology and evolution
- Historical biogeography of Mediterranean lineages
- Current species conservation challenges
- Biodiversity: species interactions, networks, communities and phylogenetics
- Evolutionary and ecological drivers of Mediterranean ecosystems as biodiversity hotspots
- Ecophysiology and functional traits
- Ecosystem functioning and services: challenges and risks in a changing world
- Consequences of biotic and environmental global changes for Mediterranean ecosystems

This meeting is co-organized and supported by the Spanish Association for Terrestrial Ecology (AEET), the Doñana Biological Station (EBD-CSIC) and the University of Seville (US).

Index

Organizing Committee 5
Scientific Committee 6

Daily Schedule
- Tuesday 31st January, 2017 7
- Wednesday 1st February, 2017 8
- Thursday 2nd February, 2017 9
- Friday 3rd February, 2017 / Saturday 4th February, 2017 10

Scientific Program: Sessions (S) and Symposia (Sp) 11

Abstracts of contributions
- Special invited lectures 14
- S. 01: Comparative ecology and evolution 15
- S. 02: Historical biogeography of Mediterranean lineages 26
- S. 03: Current species conservation challenges 33
- S. 04: Biodiversity: species interactions, networks, communities and phylogenetics 44
- S. 05: Evolutionary and ecological drivers of MTEs as biodiversity hotspots 67
- S. 06: Ecophysiology and functional traits 71
- S. 07: Ecosystem functioning and services: challenges and risks in a changing world 95
- S. 08: Consequences of biotic and environmental global changes for MTEs 109
- Sp.01: Across-kingdom mutualistic interactions of Mediterranean endemic plants 128
- Sp.02: Filling current knowledge gaps: understanding the role of plant-soil interactions in the MTEs 132
- Sp.03: Mediterranean Ecosystem Services 146
- Sp.04: Eco-evolutionary dynamics in a changing world: integrating genes, traits and ecosystems 151
- Sp.05: Insights on the fourth dimension: the palaeoecological approach to modern ecological questions 155
- Sp.06: Evolutionary and ecological assembly of plant assemblages in biodiversity hotspots 159
- Sp.07: Contrasting worldwide functional trait trends in Mediterranean-type ecosystems 163
- Sp.08: Fire and Plant-Animal Interactions 168
- Sp.09: Local adaptation in the Mediterranean 173
- Sp.10: Resilience and criticality in Mediterranean ecosystems 177
- Sp.11: Evolutionary responses to climate change. Evidence from Mediterranean plant populations 188
- Sp.12: Establishing linkages between species interactions and ecosystem functioning and services 193
- Sp.13: Investigating ecological and evolutionary processes with NGS 201
- Sp.14: Fire-driven evolution of MTE floras 206
- Sp.15: Plant reproductive ecology and evolution in a changing Mediterranean climate 210
- Sp.17: The role of ecological interactions in recovering self-regulating and diverse MTE 220
- Sp.18: Origin of the Mediterranean Climate 224
- Sp.19: Mediterranean High-Mountain habitats: challenges for research & a global conservation concern 227
- Sp.20: Seed dispersal and frugivory in changing Mediterranean landscapes 233
- Sp.21: Ecoinformatics: data science brings new avenues for ecology 242
- Sp.22: Plant Invasions in Mediterranean-Type Ecosystems 246

Authors index 255
Acknowledgments 267

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S.06-31-Poster

Influence of vapour pressure deficit in leaf turgor pressure measured in olive shoots with and without fruits

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The Mediterranean Basin is one of the hot-spot of biodiversity and climate in the world where the climate change constitutes a threat for agro-ecosystems such as the olive orchards. The actual tendency of increasing plant density in these orchards requires increasing water amounts for irrigation. According to predictions of the Intergovernmental Panel of Climate Change (IPCC, 2015), increasing atmospheric demand and decreasing rainfall are expected. In this human-driven scenario, studies on the physiological response of olives under irrigation to harsh environmental conditions are welcome for a rational use of water. Leaf turgor related measurements can now be easily made under field conditions thanks to the recently developed LPCP probe. Previous years findings showed that the maximum daily turgor of the leaves decreased along the dry season, even in trees under non-limiting soil water conditions. Our aim was to explore the reasons behind of this dynamic of turgor. Two hypotheses were tested: 1) a direct effect of the seasonal maximum daily VPD (VPDmax); 2) the presence of nearby fruits. Our results showed that the seasonal evolution of maximum leaf turgor was related to both factors VPD and fruits. The different stages of fruit growth and oil synthesis imposed a moderate stress in the plant, even under well-watered conditions, highlighting the sensitivity of LPCP probes to water status of the plant.

S.06-32-Poster

Growth and physiological responses of the halophyte Salicornia ramosissima to CO2 enrichment and salinity

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Climate change emerges as one of the biggest challenges for sustaining global food security so it is crucial to research about alternative crops; species capable of growing in hostile environments (salinity and water deficit). In this respect halophyte plants, like Salicornia ramosissima, may be considered because they possess morphological and physiological traits that allow them to survive against rough conditions. A glasshouse experiment was design to study the growth and physiological response of the halophyte Salicornia ramosissima, selected for its commercial interests as practical crop, in synergistic conditions of elevated CO2 (400 and 700 ppm) and salinity (0, 171, 510 mM NaCl). Gas exchange, efficiency of PSII, photosynthetic pigments profiles, carbon isotopic discrimination and antioxidant enzymatic activity were measure to follow the physiological state of the plants. Our results revealed that S. ramosissima was able to maintain its growth even at salinities of 510 mM NaCl or 700 ppm of CO2, since there was no significant difference between any treatments in the relative growth rate, RGR, although it was lower at 0 mM NaCl. Also, our preliminary results showed a positive effect on S. ramosissima development at 700 ppm CO2, in terms of enhancement of chlorophyll a and b concentrations and modulation of its antioxidant enzymatic activity which was showed by the superoxide dismutase.