



**Fifth  
European  
Psychological  
Congress**

**Rhodes, Greece  
4-9 September 2011**

**Programme  
and  
Book of Abstracts**

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**POSTERS**

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All posters will be displayed throughout the Congress in the Jupiter Foyer. Presenters should be standing beside their poster on the day and time indicated for the Poster session.

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**Environmental Stresses on Coastal Marine Algae****Poster Session 1D.1–25: 18.30–19.30****Monday, 5 September**

- 1D.1 J. Nana Annan – GROWTH AND PHOTOSYNTHETIC RESPONSES OF *PICOCHLORUM OKLAHOMENSIS* TO PHOSPHORUS AND SALINITY STRESSES
- 1D.2 Alexandre Barnett – COUPLING BETWEEN THE CELL CYCLE AND THE VERTICAL MIGRATION IN INTERTIDAL MUDFLAT MICROPHYTOBENTHOS
- 1D.3 M. Nieves – EFFECT OF TURBULENCE REGIME IN THE PERSISTENCE OF DIATOM DERIVED POLYUNSATURATED ALDEHYDES IN SEAWATER
- 1D.4 Ana Bartual – SPATIAL DISTRIBUTION OF POLYUNSATURATED ALDEHYDES IN THE GULF OF CÁDIZ (SW IBERIAN PENINSULA)
- 1D.5 Ricardo Bermejo – ASSESSMENT OF ECOLOGICAL STATUS IN SOUTHERN MEDITERRANEAN SPAIN USING MACROALGAE ASSEMBLAGES
- 1D.6 Ana Car – SPECIES COMPOSITION OF BENTHIC DIATOM ASSEMBLAGES FROM AREAS AFFECTED BY *CAULERPA RACEMOSA* (ADRIATIC SEA COAST, CROATIA)
- 1D.7 Paula Celis – NITRATE AFFECTS PHOTOACCLIMATION AND OXIDATIVE STRESS IN *CYSTOSEIRA TAMARISCIFOLIA* IN SOUTHERN SPAIN
- 1D.8 Daniel B. Danielidis – APPLICABILITY OF ABC CURVES USING DIATOM ASSEMBLAGES ALONG ENVIRONMENTAL GRADIENTS
- 1D.9 J. Ezequiel – MIGRATION VS PHOTOACCLIMATION IN MICROPHYTOBENTHOS
- 1D.10 Marie-Laure Guillemain – EFFECT OF TSUNAMI AND COASTAL UPLIFT OF FEBRUARY 2010 ON CULTIVATED AND NATURAL POPULATIONS OF *GRACILARIA CHILENSIS*
- 1D.11 Ricardo Haroun – TWENTY YEARS COMPARATIVE STUDY OF THE MARINE MACROALGAL IN THE LITTORAL OF TIMANFAYA NATIONAL PARK
- 1D.12 Ignacio Hernández – BIOMECHANICAL PROPERTIES OF MACROALGAE IN THE VICINITY OF A PROPOSED HARBOUR: IMPLICATIONS FOR COASTAL MANAGEMENT
- 1D.13 Concepción Iñiguez – TEMPERATURE AS A REGULATION FACTOR OF EXTERNAL CARBONIC ANHYDRASE IN INTERTIDAL MACROALGAE
- 1D.14 A. Kafas – VARIABILITY OF *CYMODOCEA NODOSA* AND *ZOSTERA NOLTII*: MORPHOLOGICAL, STRUCTURAL AND DYNAMIC PARAMETERS
- 1D.15 M. Teresa Mata – COPING WITH UV STRESS: THE ROLE OF CELL DEATH PROTEASES IN THE MICROALGAE *DUNALIELLA TERTIOLECTA*
- 1D.16 Ana I. Neto – MPA MANAGEMENT IN THE AZORES: INTEGRATING BIOLOGICAL, DEPTH AND GEOLOGICAL DATA
- 1D.17 Ana I. Neto – AN INDEX BASED ON SEAWEED COMMUNITIES TO MONITOR COASTAL ECOLOGICAL QUALITY IN MACARONESIA
- 1D.18 Armando Palma – REGULATION OF D1 ACCUMULATION AND PSBA EXPRESSION IN *DUNALIELLA TERTIOLECTA* UNDER UV EXPOSURE
- 1D.19 Laura Pezzolesi – INFLUENCE OF TEMPERATURE ON ALLELOPATHIC INTERACTION BETWEEN *OSTREOPSIS* CF. *OVATA* AND *COOLIA MONOTIS*

However, evidence for cell death occurring in the cultures was not found as indicated by SYTOX-green stain. The accumulation pattern for CLs 1, 3, 8 and 9, suggest that these proteases are present in the cells in a constitutive manner and UV did not have any effect in their accumulation. CL enzymatic activities were measured by using specific fluorescent substrates and the irreversible inhibitor Boc-D-AMC. The increase in CL-9 activities at 144 h was detected (except in PAB), but UV did not cause any increase in CL-8, suggesting the activation of the proteolytic cascade due to nutrient limitation. We also analysed type II MCs accumulation by western blots. PAB treatments demonstrated a correlation between UV stress and accumulation of these proteins. The maximal accumulation took place at 24 h in all cases, corresponding to the maximal effect of UV in  $F_v/F_m$ . Our results suggest the involvement of MCs in UV induced stress, acting as stress proteins, and related to cellular survival rather than to cell death.

#### 1D.16

##### MPA MANAGEMENT IN THE AZORES: INTEGRATING BIOLOGICAL, DEPTH AND GEOLOGICAL DATA

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Marine protected areas in the Azores have traditionally been designated solely on the basis of aesthetic landscape criteria and empirical knowledge on biodiversity. Recently, rocky shore characterization studies in several islands using biotope methodologies were used to provide geographically referenced information for environmental management purposes. This approach is widely accepted throughout Europe and literature is vast on the application of biotopes in marine spatial planning. In São Miguel Island such methods were extensively used but excluded small islets that exist close to shore. Some of these islets are part of marine protected areas and require scientifically valid basic ecological information for their monitoring and

management plans. The present work presents results on the use biotope methodology for the characterization of islets inside MPAs and the importance of this tool in ecosystem based management.

#### 1D.17

##### AN INDEX BASED ON SEAWEED COMMUNITIES TO MONITOR COASTAL ECOLOGICAL QUALITY IN MACARONESIA

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In the Atlantic the use of macroalgae for the assessment of ecological quality of coastal waters has focused on multimetric approaches based on littoral seaweed community features, namely the species richness (FSL/RSL) tool developed in the British Isles and the CFR tool in north Spain. However, intertidal rocky shore seaweed communities in the Macaronesian archipelagos are dominated by turfs and lack most of the large and abundant fucoids that are common in more northern countries. Therefore, neither of the two methods applies perfectly to Macaronesian shores. In an attempt to intercalibrate the results obtained by implementing the FSL/RSL and the CFR tools with Azorean seaweed communities, an alternative model is proposed building on their common features and adapting them to this region's specificities. The proposed adaptations envisage the need to implement such tools across Macaronesia and compare to other North Atlantic shores as set out by EU guidelines (Water Framework Directive and Marine Strategy Framework Directive). However, the calibration of this method is quite difficult in the Azores where pollution is almost absent and its possible impacts diluted by the effect of strong wave action. Such a scenario forces one to work only with the top end of the quality scale, without

the bottom end to calibrate its boundaries and validate its applicability, and it therefore needs to be tested in other geographical areas and under several pollution conditions.

#### ID.18

##### REGULATION OF D1 ACCUMULATION AND PSBA EXPRESSION IN *DUNALIELLA TERTIOLECTA* UNDER UV EXPOSURE

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The effect of different UV treatments on D1 protein accumulation and its gene (PsbA) expression, concentration of photosynthetic pigments (including xanthophylls cycle) and photosynthetic activity (estimated as changes in the optimal quantum yield of fluorescence ( $F_v/F_m$ ) and electron transport rate (ETR)), were studied under chronic UV exposure during 7 days. Cells were exposed to four UV different treatments when cultures reached mid log phase: PAR (P), PAR + UVA (PA), PAR + UVA + UVB (PAB) and UVA + UVB (AB),  $P = 120 \mu\text{mol photons m}^{-2} \text{s}^{-1}$ ,  $UVA = 17 \text{ W m}^{-2}$  and  $UVB = 1 \text{ W m}^{-2}$  (unweighted). A general decrease in  $F_v/F_m$  was observed under UV but after 48 h small recovery was observed in PAB, but not in PA. However, the highest values for  $F_v/F_m$  recovery were obtained without PAR. Similar results were obtained with ETR and data paralleled the progressive decrease in  $O_2$  production due to photoinhibition. In addition, ROS production was enhanced by UVB, specially at days 1 and 3, showing a negative correlation with PsbA gene expression and D1 accumulation ( $P < 0.05$ ). D1 initially decreased during the first day but after 3 days in PAB, cultures recovered and reached initial values. Regarding pigmentary behaviour, chlorophyll *a* and *b* were only different under AB, presenting a pattern typically found in dark adaptation, and the content of neoxanthin and lutein followed the same trend as chlorophylls. The effect of UV on the xanthophylls cycle was also studied, remarking that the de-epoxidation state dropped down with maximal differences after 48 h in PAB, and 24 h in PA and AB. Our results demonstrate that D1 repair is enhanced by UVB in combination with PAR, and that such D1

induced-turnover is regulated by the rate of ROS accumulation and the efficiency of xanthophylls cycle, since ROS inhibit PsbA mRNA translation in this.

#### ID.19

##### INFLUENCE OF TEMPERATURE ON ALLELOPATHIC INTERACTION BETWEEN *OSTREOPSIS* CF. *OVATA* AND *COOLIA MONOTIS*

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Proliferation of the benthic dinoflagellates, *Ostreopsis* spp. are reported in many tropical and temperate regions worldwide. In the last decade, blooms of *O. cf. ovata* have become increasingly frequent in the Mediterranean Sea and resulted in relevant benthic biocenosis sufferings and human health problems. Besides putative palytoxin, new compounds, namely ovatoxins, have been recently isolated from different strains of *O. cf. ovata* through an in-depth high resolution (HR) LC-MS investigation. Along the Mediterranean coasts, *Ostreopsis* spp. are generally present in association with other benthic species, namely *Coolia monotis* and *Prorocentrum* spp. *C. monotis* is a species quite common in temperate and tropical waters, where it has been frequently detected at low concentrations during warmer periods. It is reported to produce a toxin, named cooliatoxin that is believed to be structurally related to yessotoxin based either upon the molecular weight and symptoms induced in mice; however, its structure is still uncharacterized. Moreover, the Mediterranean strains have never reported toxic effect. It is therefore interesting to investigate the interaction between the two species at different environmental conditions, especially temperature. Adriatic strains of the two