



INTERNATIONAL
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**PROGRAM GUIDE &
ABSTRACTS**

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of
The International Biogeography Society

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NB-13

Leaf morphometric variation and biogeographic inferences of a Neotropical species

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Blepharocalyx salicifolius relationship over Neotropical Myrtaceae is complex and is supposed to be sister group of Myrtaceae from the new world or considered to be of highly interest in the resolution of evolutionary relations in this important taxonomic group. This species is widely distributed in the main Neotropical biomes, it is highly plastic, and combines two ecological characteristics that are dominant in the Neotropics: bee-pollination and bird dispersal. We hypothesized that this species would present biomes-structured leaf plasticity, which would correspond to a biogeographic structure observed in an independent phylogenetic analysis resulting from a broad genetic sampling of this species. To do so, we analyzed eight foliar morphometric variables of this species using data collected from different biomes to explore possible ecological structuring within morphological polymorphism. We performed correlation analyses between variables, tests of variance between means, outline (shape) analysis and principal component analysis (PCA). We also performed the leaf outline reconstruction forms of this species inferred from Elliptic Fourier analysis. The modeling leaf shapes correspond virtually to the major phylogenetic lineages observed for *B. salicifolius*. There was no evident structural difference among biomes, however the combination of some leaf characters appears to be selected under certain environmental conditions. Based on morphometric analysis, we give analytical support to the high foliar plasticity of *B. salicifolius* and indicate a model of leaf shape. Our work is a step forward to clarify the taxonomic and biogeographic aspects of this species.

PE-01

Towards a stomata based atmospheric CO₂ reconstruction using *Pinus* and *Abies* Holocene remains in the Iberian Peninsula

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A number of species (i.e.: *Quercus*, *Betula*, *Pinus*, *Tsuga*...), which leave/needle remains have been preserved in different deposits along the Earth and, therefore, they have been used to reconstruct past atmospheric conditions. Still, plant atmospheric responses are species and site specific, and calibration with present or recent past material is needed prior to estimate any atmospheric parameter. Recent palaeobotanical researches in the Pyrenees and in the Iberian Central System, conducted under a coordinated project funded by the Spanish Ministerio de Ciencia, Innovación y Universidades (CSO2015-65216-C2-1-P/2-P), have given light to numerous *Abies alba* and *Pinus sylvestris-uncinata* type Late Pleistocene needle remains. Here we present the preliminary stomatal-atmospheric CO₂ calibration performed on *Pinus uncinata*, *Pinus sylvestris* and *Abies alba* altitudinal transects sampled during 2013 and 2017 on six Pyrenean populations (Irati-Navarra, Mata de Valencia-Lérida, Virós-Lérida, Maçarent de Cabrenys-Gerona, Montseny-Barcelona), and an additional *P. sylvestris* Central System population (Cotos - Madrid). Five to nine needles per altitude, sampled every 100 m altitudinal increase (from 900 to 2600 m a.s.l.) were macerated and skilled to analyse cuticle parameter (stomata density, stomatal length, stomatal band width and length and pore length) responses to CO₂ atmospheric partial pressure changes.