**Introduction**

This work analyses two pollen records (Lake Fuquene and Pantano de Martos) in order to test the usefulness of the Biomization technique at regional scale. This study focuses on Biomes and Plant Functional Types response to climate changes on specific dates (18, 14, 12.5, 8 and 6 Kyr BP) as deduced from the pollen composition. The analysis of the different Plant Functional Types reconstructed on the study sites at different ages, together with the Arboreal / Non Arboreal pollen information, give a detailed idea of the ecosystem response to past climate changes. Our results present palaeoecological studies at local / regional scales, as a valuable long term information for adaptative forest management strategies, and to test habitat suitability models.

**Material and methods**

The Biomization technique (Prentice et al; 1996) assigns plant functional types (PFT) and a biome to a taxa assemble. Firstly, the PFT are defined for the study area based on plant structures (shrub, tree, etc), phytotype (deciduous, needle, broadleaf, etc), phenology and climate adaptation (drought, frost, etc). Secondly, the different pollen taxa are ascribed to one or more PFT in a matrix (M2). Then other matrix is performed where the PFT are attributed to a Biome (M1). The union of the two matrices translates the pollen record into biomes (Marchant et al., 2001).

**Results**

The results show different responses of vegetation to changes in past environmental conditions, which can be attributed to the different altitudes of the two study sites. While biomes in Lake Fuquene (2500 m a.s.l.) shift from Cool Grassland (CGSS) at 18 Kyr to Cool Mixed Forest (COMI) and Cool evergreen Forest (CEFO) at 6 Kyr ago, no biome shift is detected in Pantano de Martos (3200 m, 4° 58’N, 73° 42’W) throughout the Late Quaternary.

**Conclusions**

- This study shows the potential of the Biomization technique as a simple and powerful tool to analyze ecosystem responses at regional scales.
- The > 20 krys of CGSS stability at Pantano de Martos is showed up as responsible for the high endemicity that characterize the Páramo type vegetation.
- The shifts observed on the vegetation belts at Fuquene site seems to be response of the different frost and late frost adaptation capacity of the different Plant Functional Types.

**For further information**

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**Figure 1. Study sites. Fuquene lake (2539 m, 5° 27’ N, 73° 46’W) palynological data was compiled though the Latin American Pollen Data Base (LAPD). Pantano de Martos (3200 m, 4° 58’N, 73° 42’W) records were provided by Berrio J.C.**

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**Literature cited**


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