

**ID:**  
IBS2019353

**Primary Contact:**  
Mario Mairal , Stellenbosch University  
Stellenbosch , South Africa

**All Authors:**  
Mario Mairal, Stellenbosch University (**Primary Presenter**)  
Mary Namaganda, Makerere University (Uganda)  
Christian Brochmann, National Centre for Biosystematics, Natural History Museum, University of Oslo  
Pilar Catalán, Escuela Politecnica Superior de Huesca, Universidad de Zaragoza

**Abstract Title:**  
Colonization and diversification of wind-dispersed *Festuca* grasses in Afroalpine sky-islands.

**Abstract:**

Mario Mairal<sup>1</sup>, Mary Namaganda<sup>2,3</sup>, Christian Brochmann<sup>4</sup> & Pilar Catalán<sup>2</sup>

The high degree of isolation and altitude of the Tropical African mountains has led to consider them as "within-continent" islands or sky islands – geographically isolated high-altitude habitats occurring alongside different mountain ranges. Furthermore, Afroalpine sky-islands present one of the most interesting systems to study discrete biogeographic patterns in a terrestrial island system. Although several studies have addressed the biogeographical affinities in Eastern African sky-islands, the relationships with Western African (sky-) islands (Cameroon, Bioko) are almost unknown. Here, we used Afroalpine *Festuca* grasses to explore the role of Eastern and Western African sky-islands in the evolution of biodiversity and its dispersal patterns. Phylogeographic analyses were undertaken using plastid and nuclear sequences and AFLP fragments. Population genetic and phylogeographic analyses were performed to infer genetic diversity, genealogical relationships, genetic structure, gene flow barriers, colonization routes and the spatio-temporal evolution of populations. We found that genetic variation was structured across the Great Rift System, with the East Africa Western Rift sky-island populations showing greater affinity with the West African than with the East Africa Eastern Rift populations, despite the greater distances. We also detected different colonization events of the West African mountains, originating either from the Western and from the Eastern Rift areas. Additionally, our study highlights the role of the African sky-islands as long-term refugia and cradles of genetic diversity for the Afroalpine grasses.

**Preferred Presentation Type:**  
15 minute talk

**Keywords (optional):**  
ancestral areas, long-distance dispersal, continental disjunctions, phylogeography

**1st Category choice :**  
Island Biogeography

**2nd Category choice :**

Biodiversity Patterns and Maintenance

**Country of presenting author:**

Spain

**Gender identity:**

Male