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### PHYLOBETADIVERSITY AND PHYLOGENETIC NICHE CONSERVATISM OF MOUNTAINTOP GRASSLANDS IN MINAS GERAIS STATE, BRAZIL

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Tema/Meio de apresentação: Filogenia/Pôster

Brazilian mountaintop grasslands (“Campos de Altitude”) encompass harsh environmental conditions (e.g. climate, altitude, shallow soil) sheltering many endemic plant species functionally adapted to such conditions. The aim of this study was to evaluate the phylogenetic beta diversity among seven mountain tops, each one with one altitude, located in Minas Gerais State (four sites in Serra do Brigadeiro State Park with 1690 to 1980 meters of altitude, and three in Caparaó National Park ranging from 2769 to 2892 meters), and to test for phylogenetic conservatism of altitudinal niche. We pruned the megatree R20160415.new to all taxa from our dataset (220 species) by Phylocom 4.2 package. The indexes of phylobetadiversity *betaNRI* (beta net relatedness index) and *betaNTI* (beta nearest taxon distance) were paired calculated among sites to measure phylogenetic turnover. Niche conservatism to altitude (mean values from the seven sites) was tested by calculating phylogenetic signal with Moran’s I in R software (package *phylosignal*). We found significant low phylogenetic turnover by *betaNRI* for 6 pairs of sites indicating homogeneous distribution of older clades among study sites. To terminal clades, *betaNTI* showed high phylogenetic turnover for 9 pairs of sites and low turnover for 6 pairs. The findings of *betaNRI* and *betaNTI* were observed to sites within and among parks. Phylogenetic signal was significant ( $I = 0.005$ ,  $p = 0.0003$ ), suggesting the presence of species conserving their preferences for altitude of occurrence more than expected under a Brownian Motion Evolution. Low phylogenetic turnover seems to be a common pattern among the studied sites, since it was found to both *betaNRI* and *betaNTI*, and there is an indication of altitudinal niche conservatism to terminal clades. But, we are aware that only widespread values of altitude (minimum, maximum and mean) to the species can answer issues on their niche conservatism with more liability.

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