

## **SOUTH AMERICAN MONTANE FORESTS IN A WARMING WORLD**

Montane forests in the Andes and the South-eastern Brazilian Mountain Range host the highest plant biodiversity on Earth. Current rates of warming in the Andes are three times higher than elsewhere in S. America, and higher than average warming of 5-6°C is predicted by the end of this century. Hence, the (sub) tropical mountain ranges in Latin America form a high-priority area in which to study the response of tropical trees under future environmental change. Tropical forests also play a crucial role in the global carbon budget, accounting for more than half of terrestrial net primary production and storing around 40% of plant biomass. The carbon balance of the tropical ecosystems is responsible for a large proportion of the inter-annual variability in the carbon cycle, and comprises a large component of the uncertainty in atmospheric CO<sub>2</sub> concentrations under any given scenario of anthropogenic CO<sub>2</sub> emissions. However, the current generation of Dynamic Global Vegetation and Earth System Models do not include a representation of montane forest functioning, which stems from the lack of empirical understanding, leading to a consideration of only lowland tropical forests in models. We intend to address this knowledge gap by initiating a Latin America-wide network of tropical montane forest sites to gather existing understanding in order to model the contribution of these forests to the regional and global carbon and water cycles, under current and future climate change. This will be achieved via a dedicated workshop at the Uni-Campinas, Brazil, hosted by PP-FAPESP Nagy, with the participation of empirical experts across the network together with DGVM and ESM modellers.

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