

HYDROLOGY OF THE ANDES AND AMAZON BASIN FROM SEASONAL TO MILLENNIAL TIMESCALES

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Tropical South America plays an important role in the global hydrological cycle. The Amazon basin is the largest fresh watershed on earth and In Colombia the majority of people rely on freshwater sources from high Andean wetlands. Climate change is a global phenomenon but very little is known how climate change is affecting these hydrological systems. Climate also changes naturally over geological timescales. The earth is a living laboratory with lots of different climatic scenarios that we can study. Through stable isotopes, we can study the hydrological cycle over time and this allows to look into the past from decades to millennial timescale. Studying this will significantly enhance our understanding of contemporary climate change and its effect on our ecosystems. In this talk I will present how we used Amazonian trees to study long terms hydrological changes over the Amazon basin. We can significantly increase the time scales by making use of fossil leaf-wax and stable isotopes, the high altitude wetlands of the Andes are one of the best locations to study the climate over even longer timescales from millennia to millions of years.