Back in time: palynologycal data to rebuild ecosystem shifts in the Holocene

Forecasting the future impact of climate on ecosystems needs long time series data, which is often scarce for ecological communities. However, it is possible to use biological proxies to characterize past ecosystems. These proxies have several advantages. On the one hand, they spam over time periods including major climate changes. On the other, provide information about community composition, which allow inference about system level properties. Thus, it is possible to identify shifts in ecological communities and disentangle the drivers behind them. In this presentation I will show the preliminary results of our work on reconstructing ecological networks during the Holocene using the palynologycal records in mountain lakes. These networks show us the response of ecological communities to the conditions in their surroundings, including climate and human activities, providing valuable information about how ecosystems respond to global change drivers over time. Our results could help to anticipate how will ecosystems respond to climate in the near future, predict the arrival of major shifts, and highlight the value of ancient biological proxies for climate change research.