



## **Comparison of precipitation estimates from plant and large mammal proxies for the European Neogene**

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We used data from Pangaea/NECLIME and NOW-databases to investigate the similarity of environmental patterns of plant and large mammal data during the European Neogene (23-1,8 Ma ago). We concentrated on reconstructing precipitation values and gradients. Precipitation values were derived from cheek tooth height for fossil large herbivorous mammal and using coexistence approach for fossil plants.

Results show that the overall trends in both datasets are similar; in most cases the sites that are wet according to CA method are also wet according to large mammal precipitation proxy. This is especially true for Early and Middle Miocene. Proxy values from plant and mammal data differ more during Late Miocene. This suggests that when environmental conditions are more stable, also the proxies work better. When variability of precipitation increases both in time and space during the Late Miocene also our estimates give more variable results. The most interesting cases are those where the estimates differ from each other considerably, as they will reveal more about the mechanisms how the proxies work.

We also compared the values in different geographic areal settings, with all values averaged and for minimum and maximum values within those areas. Comparisons were made also with the climate model run results to see whether the areas where the precipitation estimates from mammal and plant proxies differ can be explained by atmospheric or ocean circulation patterns.