

Climate dynamics during the Panama Isthmus closing: a multiproxy approach

CARME HUGUET¹ ANDREA JAESCHKE² J. RETHEMEYER²

¹Geoscience department, Los Andes University, Carrera 1, #18A-12, 111711, Bogotá, Colombia. ² Department of Biogeochemistry, Institute of Geology and Mineralogy, University of Cologne, Zuelpicher Strasse 49a, D-50674 Cologne, Germany

We used molecular proxy records from the Pliocene down to the late Miocene to understand the effects of the closing on climate and ocean circulation¹.

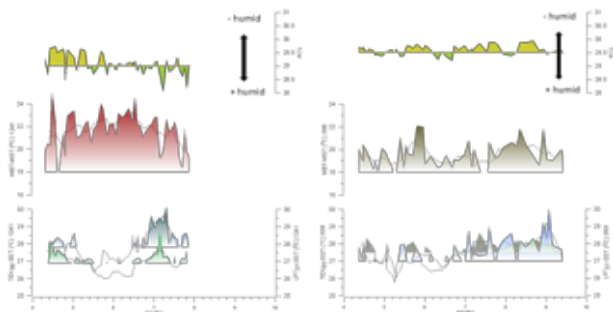


Figure 1. Patterns of *n*-alkanes and organic temperature proxies at both sides of the isthmus.

In the Pacific, we see a shift between more humid conditions before 6 Ma and drier after while the Caribbean indicate an overall drier regime (Fig. 1). Both U^K_{37} and TEX_{86}^H show similar temperature ranges with an average 28°C which is in agreement with other temperature reconstructions² and displaying no significant difference from 0-200m (Fig. 1). While MBT-CBT temperatures are well coupled in the Caribbean they show opposing trends in the Pacific, in this case probably related to low biomarker abundance. Our temperature data allow distinguishing between Late Miocene Warm period, Cold Late Miocene cold period and a small fraction of the Pliocene warm period.

[1] Lear *et al.* (2003) *Earth Plan. Sci. Lett.* **210**(3-4),425-436; [2] Bickert *et al.* (2004) *Paleocean.* **19**(1), 1-1.