

## LATE HOLOCENE PALEOENVIRONMENTAL CHANGES IN NORTHEAST BRAZIL RECORDED BY LACUSTRINE SEDIMENTS OF LAKE BOQUEIRÃO.

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Lake Boqueirão is located at 5°S latitude, on the Brazilian Atlantic coast, a region where the climate is directly influenced by the Intertropical Convergence Zone (ITCZ) displacements. A short (1m) core "Boqc0701" was collected at 7.5m water depth based on a seismic survey. Granulometry, Total Organic Carbon, Organic matter Rock Eval (Hydrogen Index (HI), Oxygen Index (OI)) allowed us discriminating five sedimentary intervals through the last 3000 cal yrs BP. Phase E (3000 to 2050 cal yr BP) presents the largest Granulometry, TOC, HI and OI fluctuations of the entire core. The most probable cause of these variations is a great instability of the lake level during this period. Phase D (2050 to 1830 cal yr BP) is marked by an increase in sedimentation rate and a higher contribution of a well preserved OM, of algal origin, that this interpreted as a higher and more stable lake level. During phase C (1830 to 1550 cal yrs BP), low HI and high OI indicate the input of more oxidized, degraded and detrital OM, reflecting a lower lake level. In phase B (1550 to 1470 cal yr BP) OM quality and quantity (HI and TOC) indicates an algal contribution. During phase A the high stability of Rock Eval proxies contrasts with variations of TOC and Granulometry. These changes in lake level can be compared with other tropical South America high resolution records. It seems that there is a correspondence between phases of low ENSO, cool North Atlantic Ocean and Boqueirão wet phases. A prolonged dryness occurred in Lake Boqueirão since 570 cal yrs BP, till the last decades. This phase corresponds to the Little Ice Age characterized by a cooler North Atlantic Ocean. These data indicate that the teleconnection pattern between tropical Atlantic, ENSO and Northeast Brazil rainfalls has changed in the past 3000 years.

One of the reason of this changes seems to be the influence of Amazonian rainfalls that are linked to South American Monsoon. When intense precipitations and deep convection occur over Amazonia there is a downwelling over Northeast Brazil reinforcing the Atlantic High, reducing precipitations and maintaining ITCZ on a northern position.

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