

BRAZILIAN PALEOCLIMATE SINCE THE LAST GLACIAL MAXIMUM

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Brazilian continental records of paleoclimate as well as records from other tropical regions indicates that the Last Glacial Maximum (LGM) was marked by a 3-6 °C cooling. These observations were in contradiction with the first General Circulation Model reconstructions but are now confirmed by the most recent models where ocean and atmosphere are coupled. The cold continental temperatures in the tropics decreased the land-ocean temperature gradient and the transfer of moisture from the ocean to the continent enhancing tropical dryness. Cool climate conditions are recorded in Brazil until the Early Holocene but several steps of moisture enhancement can be observed after the LGM. Another characteristic features of this Late Glacial phase in Brazil are the continental and marine records of land erosion. These intense erosion cannot be explained by the reduced vegetation cover alone and must be related to an enhancement of rainfall erodibility. Several Brazilian records indicate a dryer climate at the early or/and middle Holocene and then moister conditions until the present. This trend seems in good agreement with the increase of summer insolation driving a southward penetration of Northern Trade Winds and Amazonian wetness (South American Monsoon).