



## **Amazon Continental Margin: the evolution of Cenozoic climate, oceanography and neotropical biodiversity**

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### **Abstract**

The Cenozoic climatic evolution of the Amazon region, the origins and evolution of the neotropical rain forest and its biodiversity, and the origins and rearrangements of the transcontinental Amazon River and the Amazon Deep Sea Fan are fundamental themes under investigation on the Trans-Amazon Drilling Project (TADP) funded by the International Continental Drilling Program (ICDP), the International Ocean Discovery Program (IODP); the US National Science Foundation (NSF), the São Paulo State Research Foundation (FAPESP), the Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES) of Brazil, and private funding. TADP aims to drill three continental sites, respectively in the Acre, Solimões and Marajó sedimentary basins and two marine sites, to be drilled during IODP Expedition 387, on the Foz do Amazonas upper continental slope (~350 to 450 m).

These sites will recover the most complete Cenozoic sedimentary record, with abundant pollen, organic matter, zircon grains, clay minerals, marine microfossils and organic matter allowing detailed reconstruction of the biodiversity, climate, and hydrology of the tropical South American continent as well as determination of palaeoceanographic conditions of the western equatorial Atlantic that partly forced the climate of the adjacent continent.

We expect to provide enough information to conduct an integrated analysis of continental and marine sedimentary records and to reconstruct the spatial changes of biodiversity and climate through time in response to the rearrangement of watersheds, during the establishment of the transcontinental proto-Amazon river, reaching the Atlantic between 11 and 2 Ma. The new cores will also give precise information to date and reconstruct the advance of Amazon derived terrigenous sediments across the continental shelf, contributing to the formation of the Amazon Deep Sea Fan and to the demise of the Amapá Formation carbonate platform.