



Proceedings of the
6th Latin American Congress of Sedimentology

July 2013

University of São Paulo, Brazil

Editors

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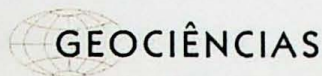
This volume was published with financial support from FAPESP
Grant #2013/09615-8 São Paulo Research Foundation (FAPESP)

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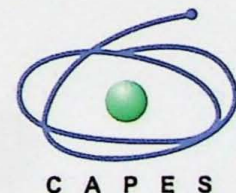
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Provenance, transport and storage of sediments in the Amazonian fluvial system

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Suspended, surface and buried sediments from the downstream portions of the major Amazonian rivers (Solimões, Negro, Madeira, Tapajós, Xingu and Amazonas) and from the shelf off Amazonas river were sampled to evaluate provenance signatures, time of storage and degree of recycling (erosion-burial cycles) within the fluvial system. This has been performed using optically stimulated luminescence (OSL), heavy minerals, radionuclides, major elements and C and H isotopes data constrained by OSL and radiocarbon ages. Rivers draining the Andean mountain belt (Solimões and Madeira) and rivers draining the Guiana and Brazilian shields (Negro, Tapajós and Xingu) comprise two end members sediments. However, high variability is observed within each end member, allowing the discrimination of the sediments from each river. The Solimões and Madeira rivers dominate the present sediment load supplied to the Amazonas river. The lower portions of the Negro, Tapajós and Xingu rivers show a flooding morphology due to blocking of these rivers by sediment bars of the Amazonas river. This provokes the trapping of sediments in bar complexes of the lower Negro, Tapajós and Xingu rivers, reducing their sediment fluxes to the Amazonas river. Changes in precipitation between western and eastern Amazonia can modulate differences in the sediment flux between the Amazonas river and its eastern tributaries, promoting sediment accumulation in river confluences and blocking of tributaries. The analysis of sediments from ancient fluvial bars and from the shelf off Amazonas river allows to evaluate changes in sediment storage and transfer within the Amazonian fluvial system since the Late Pleistocene.