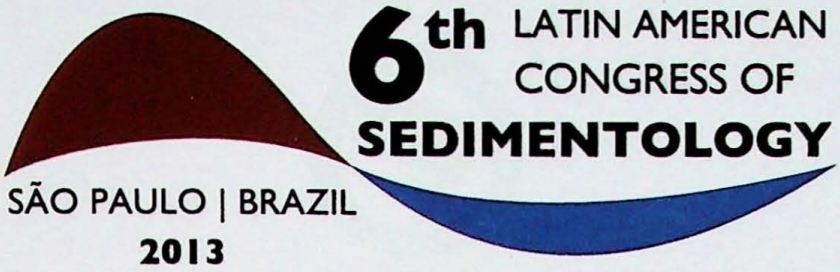

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Carlos H. Grohmann, Claudio Riccomini, Dilce de Fátima Rossetti, Renato Paes de Almeida, André Oliveira Sawakuchi, Lucas V. Warren, Adilson Soares, Fernanda Quaglio, Paulo Cesar Fonseca Giannini, Thomas Rich Fairchild, Giorgio Basilici, Mario Luis Assine

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Sinsedimentary tectonics along the Transbrasiliano Fault System in South America

Marlei Antonio Carrari Chamani[1,2*], Claudio Riccomini[1,3], Carlos Henrique Grohmann[1,3], Marília Pulito de Aguiar[1,4], Lucas Veríssimo Warren[1,5]

[1]Núcleo de Pesquisa em Geodinâmica de Bacias Sedimentares e implicações para o potencial exploratório (petróleo, gás natural e água subterrânea) - GEO-SEDex / Instituto de Geociências, Universidade de São Paulo, Brazil.

[*]*marlei.chamani@usp.br*

[2]Doctorate fellowship, CNPq, Brazil.

[3]Research fellow, CNPq, Brazil.

[4]Master fellowship, CNPq, Brazil.

[4]Post-Doctorate fellowship, FAPESP proc. 2010/19584-4.

The Transbrasiliano Fault System (TBFS) is a coherent fault system with a length of ca. 6.500km (4.300km in South America and 2.200km in Africa). In South America, the TBFS extends from south of Córdoba (NW Argentina) to Ceará (NE Brazil). Evidence from sinsedimentary deformation structures shows the occurrence of several episodes of reactivation along the TBFS since its origin. In NE Paraguay, slumps with a likely seismic trigger occur in the base of Cerro Curuzu Formation of Itapucumi Group (Ediacaran), associated with incised valley fluvial deposits. Soft-sediment deformation structures interpreted as seismites occur in the Água Bonita and Vereda Verde formations (Silurian, Água Bonita Basin, central Brazil). Seismites associated with the TBFS occur also in the southwestern portion of the Parnaíba Basin (NE Brazil), in the Pimenteiras/ Cabeças (Middle to Late Devonian) and Piauí (Carboniferous) formations. In the same area, slumps with a probable seismic trigger occur in the Areado Group (Early Cretaceous, Espigão Mestre Basin). In the Sierras Pampeanas de Córdoba (NW Argentina), Cretaceous deposits present fluidification structures and synsedimentary faults, with stress fields indicating a left-lateral reactivation of the TBFS. Recent tectonics associated with the TBFS is evinced by faults affecting recent sediments and soils in central and northeastern Brazil. The occurrence of repeated reactivations over time and in different places along the TBFS emphasize its importance as a key element not only in the western Gondwana assembly, but also in the evolution of the South American Platform.