



## **Late Neogene Sequence Stratigraphic Evolution of the Foz do Amazonas Basin, Brazil**

Christian Gorini (1), Bilal U. Haq (1,2), Antonio Tadeu dos Reis (3), Cleverson Guizan Silva (4), Alberto Cruz (1,3), Emilson Soares (5), and Didier Grangeon (6)

(1) Université Pierre et Marie Curie, IStEP, Paris, France (christian.gorini@gmail.com), (2) National Science Foundation, 6 Washington DC, USA;, (3) Faculdade de Oceanografia, Universidade do Estado do Rio de Janeiro (UERJ) Brazil, (4) Lagemar, Universidade Federal Fluminense (UFF), Niterói, Brazil, (5) Petroleo Brasileiro 8 SA, Rio de Janeiro, Brazil, (6) IFP-Institut Français du Pétrole, Rueil Malmaison, France

The margin of the Foz do Amazonas Basin saw a shift from predominantly carbonate to siliciclastic sedimentation in the early late Miocene. By this time the Amazon shelf had also been incised by a canyon that allowed direct influx of sediment to the basin floor, thus confirming that the paleo-Amazon fan had already initiated by that time (9.5-8.3Ma). Above this interval, during a prolonged lowstand, Messinian third-order sequences are preserved only in the incised-valley fills of the canyon with no equivalent strata on the shelf. Third and fourth-order sequences younger than Messinian are preserved on the shelf after sea-level rise above the shelf by early Pliocene. Sequences younger than 3.8 Ma often show fourth-order cyclicity with average duration of 400 kyr (larger scale eccentricity cycles) often preserved in high sedimentation rate areas of river deltas. Mass wasting and transportation of slope sediments to the basin began to play an important role in sediment dispersal at least as far back as mid Pliocene, after rapid progradation had produced steeper slopes 23 more prone to failure.