High-resolution sequence stratigraphy on a continental setting: a case study in out-crop (eolian environment), Mangabeira Formation, Bahia, Brazil

1 DAUDT, J. A. and 1 RAJA GABAGLIA, G. P. 1Petroleo Brasileiro S.A., Macaé, RJ, Brazil.

Sequence stratigraphic aproaches on continental settings have successfully been applied in many basins around the world. A case study is presented based on an expressive cyclicity deduced from outcrop analysis (eolian environment, Mangabeira Formation, Espinhaço Supergruop, upper Proterozoic age).This study includes detailed outcrop des-criptions, through photomosaic interpre- tation and vertical profiles, focusing on sedimentological parameters and relative importance of the boundaries identified. Three main types of eolian subenvi- ronments were recognized: a)big-dune fields (low-angle cross stratification sand-stones facies association); b)small-dune fields (festoon sandstones set facies association); and c)wet and dry interdu- nes (horizontally laminated sandstone/siltistone facies association). Two orders of sequence could be suggested, consi- dering the lower limits of the facies asso- ciations described in (a) and (b) as the boundaries. The higher one, which im- prints a cyclic pattern to the outcrop, is punctuated by interdune recurrences (pa-rasequence boundaries) separating dry from wet dune sediments. We could figu- re out 23 sequences (from 0.5m up to 3m thick). The lower order comprises two in- complete sequences estimated to be 30m thick in this outcrop, each of them grouping around 10 higher-order sequences.

Based on these described charac-teristics, associated to the stratigraphic thickness of this outcrop (50meters) and the regional analysis of Espinhaço Super-group, we suppose an allocyclic hypothe-sis as the driver mechanism. Finally, the outcrop as a whole exhibits a remar-kable wetting-upward trend (based on fa-cies arrangment), interpreted to be related to a retrogradational stacking pattern linked to the transgressive system tract of an even lower order sequence.