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Giorgio Basilici<sup>1</sup> (1) University of Campinas, Campinas, Brazil

**Reservoir Geometry of Deep-Water System Delta-Fed: Examples from The Marginal Area of The Paraná Basin (The Itararé Group, Carboniferous-Permian, São Paulo State, Brazil)**

The Itararé Group (south-east Brazil) is recognized as a potential basin for gas and oil. In this work we discuss the geometric characteristics of its marginal deposits and the factors controlling the genesis. Our objective is to produce a model of distribution of the marginal reservoir in the Itararé Group (IG). The detailed analyses of 20 km<sup>2</sup> about, near Porto Feliz (SP), allow delineating a variable depositional system in the upper part of the IG. From east to west, it is formed by: a) a shallow water area, wave-influenced, corresponding to an upper shoreface; b) an intermediate slope with pelitic deposition; c) a deeper part, corresponding to a deep-water coarse system. The shallow water area could represent a wave-dominated delta; during the storms, coarse sediment was reworked and flowed downslope as high-density flow. The gravitational mechanisms bypassed the intermediate pelitic slope, corresponding to a deltaic front and built up a sandy deep-water system. During the IG deposition, the study area is interpreted as a coastal area characterised by wave-dominated deltas feeder of deep-water systems. In this area the construction of potential reservoirs followed two different models: 1) bodies wave-controlled, parallel to the palaeocoast, more than 20 m thick, several kilometre wide and long, and with excellent petrophysical properties; 2) bodies more distal (toward west), characterised by medium - fine sandstone, alternated with very fine sandstone and pelites, east-west distributed, with excellent petrophysical characteristics, but alternated with pelitic slumping deposits fallen by a pelitic slope.