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The LUSITANIAN BASIN (PORTUGAL):

TECTONO-SEDIMENTARY EVOLUTION and PETROLEUM SYSTEMS

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The Lusitanian Basin (LB) is located at the western edge of Europe, facing the Atlantic but close to the Mediterranean. It is a peri-atlantic basin in a tethyan realm, sharing with both oceans some of its controls and main geodynamic features. This work aims to present a revised lithostratigraphic chart of the LB, the main events related to its evolution and the occurrence of petroleum system elements in this basin.

Based on a synthesis of formal lithostratigraphy and multiple complementary data (outcrop, wells, seismic), the evolution of the basin is divided in three 1st Order geodynamic rifting cycles, with 2nd Order transgressive-regressive cycles, controlled mainly by tectonic phases. The role of magmatic and diapiric events is also presented, underlining critical moments in the basin's evolution, namely in relation with geodynamic changes and the main distensile or compressive events.

Petroleum system elements, identifiable and active in the LB, may also be integrated in this framework. Different source-rocks, reservoirs, maturation and traps, were developed during the basin's Mesozoic and Cenozoic evolution of the basin, in relation with the different tectono-sedimentary controls.

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