

## **GEOLOGY, GEOPHYSICS AND PETROLEUM OCCURRENCE IN THE SOLIMÕES BASIN, AMAZONAS STATE, BRAZIL**

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The Solimões basin is a Paleozoic intracratonic sedimentary basin located in the heart of the lush Brazilian Amazon rain forest. It covers an area of approximately 450,000 sq. km, and is separated from the Acre basin to the west by the Iquitos arch, and from the Amazon basin to the east by the Purus arch. The Solimões basin is divided into two sub-basins by the Carauari arch, a north-south arch that has controlled the deposition since the Ordovician. The eastern Juruá sub-basin is better known because of the intense petroleum research carried out by PETROBRAS since 1978, when the Juruá gas field was discovered. The western Jandiatuba sub-basin is less known because of Brazilian legal restrictions on petroleum research in Indian areas and forest reserves. The stratigraphic framework consists of four 2nd order Paleozoic stratigraphic sequences, and two 2nd order Mesozoic-Cenozoic stratigraphic sequences. Petroleum occurrence is restricted to the Devonian (source rock) and Carboniferous (reservoir and seal rocks) sequences. The main traps for light oil and gas are hangingwall anticlines formed during the Mesozoic Juruá transpressional tectonics. Up to now, more than 200 wells (including 81 wildcat wells) have been drilled in this basin. Existing seismic coverage includes 66,210 km of 2D data acquired since 1976, and approximately 41,230 registers of 3D data (surveyed over 1,197 sq. km) acquired since 1988. Other available data include 64,200 km of ground gravity profiles, 20,200 km of magnetic profiles, and 372,790 km of airborne magnetic profiles.