The Camamu-Almada Basin is located in northeastern Brazil, covering an area of approximately 23,000km$^2$ (being 3,000km$^2$ onshore). Most of exploratory effort was focused in the continental shelf area. Over 80 wells were drilled in onshore and shallow water areas, while solely 3 wells were drilled in the slope and deep water areas. Such effort have resulted in the discovery of small gas accumulations in the northern onshore area, two sub-commercial oil accumulations and a gas field in the platform area.

The integration of a comprehensive dataset that encompassed seismic, gravity, magnetic and well information showed that the tectonic framework of the basin is characterized by a series of horsts and grabens limited by NE-SW normal faults and transverse structural features interpreted as accommodation zones. The interplay of these structural elements gave rise to the formation of structural platforms and restricted sub-basins, which controlled rift sedimentation and the distribution of source and reservoir rocks. Geochemical data points to the presence of organich-rich lacustrine source rocks throughout the Morro do Barro and Rio de Contas formations deposited during the rift phase. Despite this, biomarker data indicate that the basal portion of the Morro do Barro Formation is the only source of the main discovered accumulations.

State-of-the-art techniques of multidimensional modeling revealed that the main phase of petroleum generation from the Morro do Barro Formation source rocks took place till the end of the rift phase (Barremian to Aptian), while petroleum generation from potential source rocks within the Rio de Contas Formation extended until the Paleogene. Normal faults, which juxtaposed source rocks of the Morro do Barro Formation to sandstones of the Sergi Formation, played a major role in the filling of traps. Probabilistic modeling that took into account the uncertainties related with elements and processes of the petroleum system provided basis for an estimate of the migrated oil and gas volumes.

**Keywords:** Camamu-Almada Basin, Brazil, Petroleum System, Basin Modeling, Basin Analysis

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