**Fracture Systems Characterization: From the Regional Frame to the Reservoir, Sureste Basin, Chiapas-Tabasco, Mexico**

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In the Sureste Basin huge quantities of oil are produced from fractured reservoirs. The main controls in the origin and development of fracture systems in the basin are structural deformation and diagenesis. Studies made separately, both in the Sierra de Chiapas outcrops and subsurface demonstrates that the resulting fracture systems observed and controlled in outcrops are reproduced in subsurface conditions.

Throughout this work we integrate the whole studies made both in the Sierra de Chiapas outcrops and in the subsurface of Sureste Basin. Into this framework we adapted the workflow by Lohr, et al (2008). Our methodology includes three different scales of analyses: Large (we documented the regional main causes for the basin origin and evolution: tectonics, stratigraphy, sedimentation, and trap formation). Medium (we analyzed and calibrated seismic attributes and interpreted anomalies and lineaments from discontinuity seismic attributes). Small (we identified, analyzed and characterized fractures in image logs, cores and thin sections from many wells of a very important oil field in the basin).

We know, from earlier studies, that the fracture systems in the Sierra de Chiapas develops as a power law, and considering the concepts of fractals, we propose that the fracture systems documented by our analyses, are the auto-similar expression of the lineal anomalies extracted and interpreted from seismic discontinuity attributes of Juspi-Arroyo Zanapa 3d-cube.

The documented fracture systems display a close geometric relationship with the structure and the main faults which limits the oil field in four different blocks (each with different production characteristics), on the other side the fracture abundance is directly controlled by the dolomitization halos.

We identified eight different fracture families based on its orientations and fracturing paragenesis, we established the relative timing between them in base of their cut relationships. Finally we measured its minimum aperture value and the connectivity-conductivity relationships, this are very important input data for the reservoir simulation and characterization.

When we are dealing with a fractured reservoir, the understanding of micro-macro fracture systems relationships is critical because it helps to calibrate oil reserves versus production and contributes to a better knowledge for its optimal administration.