



Congreso Mexicano del Petróleo

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## **5. MATURE FIELD EVALUATION AND REDEVELOPMENT: OVERVIEW, CASE HISTORIES, AND LESSONS**

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**MS, MBA, PG – AKD PROFESSIONAL SOLUTIONS**

*“Compartir ideas para frontar nuevos retos”*

The subsurface heterogeneity (complexity) of an oil field is the single, most challenging aspect with dominant influence on the field productivity. Chances are with increased knowledge of the field, one is better equipped to deal with the challenge, provided one uses the right geology model to start with, and an improved understanding of the subsurface data. This course is developed based on the work on several mature fields in the Middle East, Far East, US Onshore and Offshore, Argentina. This is a “bottoms up” approach, starting with field evidence and adopting a working model. It is true that no two fields are alike, but the principles of petroleum system and sequence stratigraphy work similarly, once the regional elements are understood.

The following methodology has evolved over a period, working on many mature fields in many basins of the world. The primary focus is on analyzing a mature field with new and fresh perspective (Ex: 3D seismic, new understanding on phase behavior, production trends, etc.)

- Phase I: A quick bulk volumetrics or Material Balance exercise to hypothesize un-swept volumes behind the casing. This requires understanding current and historic production, production allocation, reservoir quality over the length of pay zones, quick review of petrophysics.
- Phase II: A regional investigation, understanding quickly the Petroleum system, Source, Reservoir, and trap. Recast the Lithostratigraphy into Chrono/Sequence stratigraphy. This is essential to the thesis of upside potential in field, and possible extensions of the field.

### Who Should Attend

Geoscientists, Petrophysicists, Reservoir Engineers, and Production Engineers with at least 5 years of experience

### Day 1

- Introduction to Mature fields
- Examples and case histories
- Draw common lessons

### Day 2

- Review of Geology, Geophysics, Petrophysics, and production
- Lithostratigraphy vs Chronostratigraphy, power of 3D seismic
- Suggestions and Examples of Static Modeling
- Revisit reservoir facies, capillary pressures, sealing capacities, and zonation
- Conclusions

## Biography



Sharma Dronamraju is a Geoscientist and Director, AKD Professional Solutions in Houston, Texas, USA. He worked for Petrobras USA, Marathon Oil, Halliburton, Landmark Graphics, Fugro, and ONGC over 30 years of upstream oil and gas.

His expertise lies in rejuvenating mature fields. He was associated with several deep-water developments and exploration appraisals in GoM, Gulf of Thailand, Indonesia, deep-water Nigeria, Equatorial Guinea, and South China Sea. Sharma's recent work includes Geomodeling for EOR in mature oil fields in Miocene Syn-rift clastics and carbonates and regional prospectively of Gulf of Suez, Egypt, heavy oil development in Powder River Basin in Lower Cretaceous incised valley fills (Newcastle Fm.), addressing subsurface heterogeneity of Mishrif Carbonates in Southern Iraq and reservoir modeling of HPHT fields in offshore East Malaysia and Borneo, and sub-salt interpretation, appraisal, and reservoir delineation of Lucius Field, GoM.

Sharma's current focus is continental rift basins and their contribution to geoscience. Sharma earned his Master's degrees from Indian Institute of Technology, Texas A&M University, and MBA from Rice University. Mr. Sharma is State Registered and Certified in Texas USA, Vice Chair of International Explorationists Committee, Houston Geological Society, a Member of AAPG House of Delegates. He held several trainings for target audiences, clients, in US, Middle east, and Asia; HGS and AAPG Technology Workshop in US.