

"New opportunities in Conventional and Unconventional Reservoirs"

Professor Carlos Zavala

Opening gates to new opportunities

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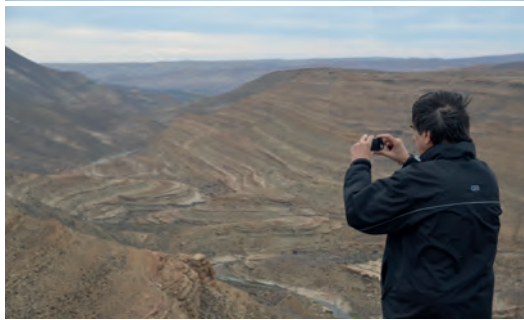


Program

Nowadays, the exploration and development of conventional and unconventional reservoirs require a deep understanding of several new concepts in sedimentology and depositional systems. However, the analysis of the Petroleum System frequently overlooks the crucial importance of reservoir geometry, continuity, connectivity, and diagenesis, probably because it is based on obsolete or out-of-scale sedimentological models when compared to the high resolution provided by 3D seismic and well logs. Consequently, substantial investments are commonly wasted due to an inappropriate estimation of reservoir risks. In the case of unconventional reservoirs, completion and stimulation techniques are not always applied properly due to a limited understanding of the internal complexity of shale deposits. The origin and internal stacking of shale deposits have been oversimplified for years with dramatic consequences in oil exploration.

During the last few decades, there has been a truly scientific revolution that allows to review the validity of most classical sedimentological models for clastic reservoirs. Growing evidence has revealed that most traditional depositional models found in the literature are basic and simplified, with almost none of them corresponding to the real world of clastic reservoirs. The amazing outcrops available in the Neuquén Basin provide a great opportunity to study at least twenty different clastic depositional systems with a huge variety of sub-environments, ranging from continental to marginal marine, shelfal, and inner basin.

In order to provide an update on the main concepts applied to the understanding of clastic depositional systems and their related reservoirs (conventional and unconventional), a series of lectures complemented with excellent field examples will be conducted during this course. The course program comprises five days of field trip, visiting some of the best outcrop examples of Jurassic and Cretaceous reservoirs in the Neuquén Basin. During this edition, we will be incorporating new technology, adding augmented reality resources during outcrop surveying. Discussions and explanations will be complemented by on-site hand drawings.



Examples of fossil depositional environments and reservoirs:

CONTINENTAL CLASTIC: Alluvial fans, Fluvial systems, Lacustrine systems, Aeolian systems,

MARINE CLASTIC: Marine littoral deltas, Hyperpycnal littoral deltas, Hyperpycnal subaqueous deltas, Intrabasinal turbidites, Tempestites, Cascadites, Estuarine deposits, Tidal bars, Foreshore sandstones, Offshore shales.

EVAPORITES: Sabkhas, Carbonate ramps, Hypersaline lakes



Professor Carlos Zavala is geologist (1987), with a Ph.D. (1993) in stratigraphy and clastic sedimentary environments. During 1994-1996 he moved to Italy to perform a specialization in turbidites with Prof, Emiliano Mutti. He has conducted numerous research and technical studies in clastic sedimentary deposits from the Proterozoic through the Holocene in several depositional basins of Argentina, Italy, Spain, Mexico, Brazil, Colombia, Venezuela, Trinidad & Tobago, China, Russia and Oman. His main contributions refer to different aspects of sedimentology and stratigraphy of ancient clastic depositional environments, with emphasis in sediment gravity flow and hyperpycnal deposits in shallow to deep waters. He authored 238 scientific papers and abstracts published in both domestic and international journals. For more than 25 years, Prof. Zavala has been conducting training courses for the academia and the industry. At present he is Professor at the Universidad Nacional del Sur (Argentina) and the leader of GCS ARGENTINA SRL, a company aimed in providing high quality research and consulting services to the oil industry.

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