

Energy Colloquium

Flow Units in Conventional and Unconventional Petroleum Reservoirs

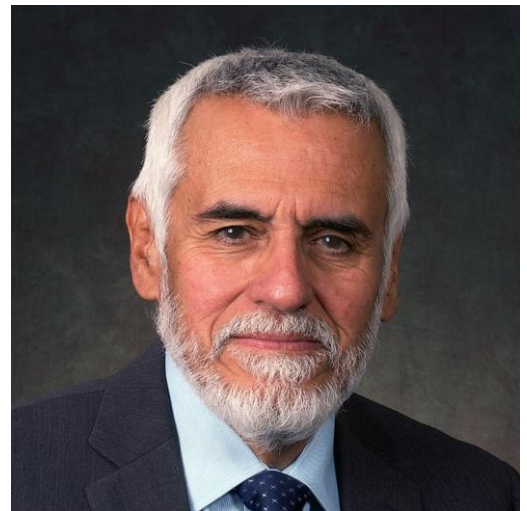
Prof. Roberto Aguilera

University of Calgary

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Skolkovo Innovation Center

Technopark, Building 3, Room 402



ABSTRACT:

Different hydrocarbons and reservoir types can be integrated under the umbrella of a 'Total Petroleum System (TPS)'. That is the premise for being able to integrate in this presentation, conventional and unconventional reservoirs. The 'unconventionals' include tight gas, shale gas, tight oil and shale oil reservoirs. Covering all these reservoirs under the same umbrella is possible as there is a continuum between conventional and unconventional petroleum reservoirs (Aguilera, 2014). The link between the various hydrocarbon fluids is provided by the word 'petroleum' in 'Total Petroleum System' (TPS) which encompasses liquid and gas hydrocarbons. This presentation demonstrates that there are distinctive flow units for each type of reservoir that can be linked empirically to gas and oil rates and under favorable conditions to production decline. To make the work tractable the bulk of the data have been extracted from published geologic and petroleum engineering literature. Production data from various formations in Canada is used to illustrate the types of production rates and declines that can occur in some hydraulically fractured unconventional reservoirs and their link to flow units. It is concluded that there is significant practical potential in the use of flow units as part of the characterization of unconventional petroleum reservoirs.

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