

ON THE STRUCTURE OF THE HYDROCARBON DISTRIBUTION ALONG THE ANDES CORDILLERA - QUO VADIS?

1CAVALCANTI, A. R. S., 2CARNEIRO, M. A. 1BRASPETRO, Rio de Janeiro, Brazil; 2UFOP, Ouro Preto, Brazil

The outstanding analysis of the USGS World Energy Project is deliberated centered on the Petroleum System concept. It is concluded that 6 stratigraphic intervals contains source rocks that have provided 90% of the World's discovered original reserves of hydrocarbons. An improved statistical approach to analyze these data highlighting that petroleum reserves is a cumulative process rather than a discrete one. It is striking that 50 % of World's petroleum have been generated and trapped since Oligocene, just synchronous to the development of our modern Orogens. Hence, we consider that the petroleum life cycle is a late process in the evolution of sedimentary basins and that the majority of sourced/trapped petroleum reserves distribution correlates extremelly well with the evolving modern orogenic systems from Late Cretaceous to Recent and, more specifically, with the Neogene tectonic evolution of such belts implying that huge amounts of hydrocarbons shall be discovered in the less explored FFTB of the Neogene Orogenic Belts of the World. In the Andes empirical relationships suggest that accretion of terranes was responsible for wider foreland fold and thrust belt development in Northern and Central Andes and that there is a close relationship with well developed foldbelts and occurrence of giant oil & gas fields meanwhile, less well-developed foldbelts may be associated with much smaller oil & gas fields. These relationships indicate that areas with well-developed foldbelts and low exploration levels might host several undiscovered giant oil & gas fields. There seems to be an original assessment to factors controlling worldwide hydrocarbon distribution based on dominant tectonic control rather than the petroleum systems or sedimentary basins as proposed by pionnering works, we shall also refute the statistical analysis of the USGS/WEF and brought out to attention that huge amounts of hydrocarbons are still to be discovered along the Neogene foldbelts of our modern orogens.