

The Genesis of Oil in connection with a History of tectonic development 1- layer model of the Earth's Crust

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Petroleum Genesis (PG) occurs in certain structural and tectonic conditions of the Earth's Crust. The modern tectonics of the Earth's Crust originated either from the primordial granite layer or primordial basalt layer. The modern tectonics of the Earth's Crust represent 1- layer Earth' Crust, consisting of a granite layer on the continents and a basalt layer in the Oceans [1- layer Model of the Earth's Crust Galant (MECG), (AAPG, Athens 2007; EGU, Vienna 2013, 2022, 2023; Goldschmidt, Hawai'i 2022;)]. Such model based on unicum data Kola Superdeep well (SG3) showed, there is no basalt layer on the continents. This Model of the Earth's Crust Galant (MECG) fundamentally changes structural and tectonic conditions and History of tectonic development, geological and geochemical setting of the Earth's Crust and hence the PG processes. The Modern Basalt layer is formed at the boundaries of lithospheric plates during intense vulcanization and replacement of the primordial granite layer (AAPG, Vienna 2013). The Modern Granites layer is formed by intensive vulcanization and replacement of the primordial basalt layer. According to this History of tectonic development, the 1 - layer model of the Earth's Crust suggests a more intense mantle-crust connection arises and, accordingly, an intense geochemical cycle of fluids. Geochemical variant of the development of oil composition in the direction: from methane to heavy and from simple to more complex hydrocarbon composition (initially Granite Crust) , and from heavy to methane and from complex hydrocarbon to simpler (initially Basalt Crust). CONCLUSIONS: Depending on the scenario of tectonic development of the Earth's Crust, the mechanism, regime, time, set of conditions and elements leading to PG change, and regardless of the scenario, oil is still generated, reflecting in its chemical composition and time-spatial localization the geological history of the development of the Earth's Crust.