



Basin dynamics and petroleum system modeling for Upper Proterozoic source rocks in southern part of the East Siberian platform

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Some ideas of the Basin Dynamics were used for petroleum system analysis “generation-migration-accumulation of hydrocarbons processes in the Upper and Middle Riphean (source rocks) – Vendian/Lower Cambrian (reservoir rock and seal rock) – Lower Paleozoic (overburden rock) mainly carbonate sedimentary sequences. The study concentrated on the certain components: 1) oil-oil and oil-source rocks geochemical correlation; 2) burial geohistory chart; 3) petroleum system events chart; 4) generation-migration-accumulation efficiency on the different stages of P.S. histories; 5) petroleum system map and the table of oil and gas accumulation and 6) calculations of the hydrocarbons resources in study area. For these aims were used well-know basin modeling computer programs: PetroMod 1D/10 and Temis pack 2D. The first program was applied for the geohistory reconstruction of 16th sedimentary sequences of the wells: Yurubchenskaya 104, Madrinskaya 156, Omorinskaya 9 and others. 2D basin modeling was applied to reconstruction of hydrocarbon generation history inside possible poof of active source rocks, maturation, and evaluation of migration pathway and estimation of hydrocarbon accumulation zones. 2D models were constructed based on 2D regional seismic (sublatitudinal – “Batolite“, and submeridional – “Altay-Severnaya Zemlya”).