



Reflection of no equilibrium two Phase Processes of Filtration in heterogeneous Media in the active seism acoustic borehole monitoring Data

Olga Hachay (1), Veniamin Dryagin (2), Galina Igolkina (3), and Oleg Khachay (4)

(1) Institute of Geophysics, Ural's Department of RAS, Yekaterinburg, Russian Federation (olga.hachay@r66.ru, +73432678872), (2) Institute of Geophysics, Ural's Department of RAS, Yekaterinburg, Russian Federation (+739126334413), (3) Institute of Geophysics, Ural's Department of RAS, Yekaterinburg, Russian Federation (+73432679727), (4) Ural Federal University, Institute of mathematics and computer sciences, Yekaterinburg, Russian Federation (khachay@mail.ru, +73432672257)

It is provided a comparison of no equilibrium effects by independent hydro dynamical and seism acoustic influence on an oil layer. It is known, that by drainage and steeps the hysteresis effect on curves of the relative phase permeability in dependence from porous medium water saturation by some cycles of influence: drainage-steep-drainage is observed. In earlier papers the analysis of the seism acoustic monitoring data in regimes of phone radiation, response on the first influence of given frequency and on the second influence is developed. For the analysis of seism acoustic response in time on fixed intervals along the borehole an algorithm of phase diagrams of the state of many phase medium is suggested. In that paper on the base of developed algorithm a new algorithm of analyze of space, but integral in time for equal observation periods changing by the method of phase diagram state of many phase medium in the oil layer is developed.

The paper was supported by the Program of Presidium UB RAS 2012-2014.

Key words: Oil and gas deposits, seism acoustic borehole monitoring data, new method of processing, reflection of no equilibrium two phase processes, heterogeneous media.