

Phase state of an organic matter for NMR relaxation in low fields of rocks of the Bazhenov suite (Western Siberia)

Sitdikova L.M., Khasanova N.M., Bondarev E.V., Sakharov B.V., Volkov V.Y., Sidorova E.U.
Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

Abstract

© 2020 IOP Publishing Ltd. All rights reserved. The work of many researchers is devoted to studying the problem of the features of the formation of the Bazhenov suite and organic matter. Various methods are used to study the type and state of organic matter, despite this, the problem associated with the phase state and type of organic matter in these deposits, the methods for studying those remains relevant. One of these methods is the NMR relaxation method in low fields. For the analysis of heavy oils, the method of simultaneous measurement of the free induction decay (FID) together with the decay of the echo signal in the Carr-Purcell-Meiboom-Gill (CPMG) pulse program was used. We studied the decay form of relaxation curves and their approximation by a mathematical model adequate for solid, liquid, and gaseous states of matter, which contains information on the geochemical and petrophysical properties of organic matter, as part of a single reservoir, including both the mineral part and the fluid part.

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