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# Integration of the seismic and geochemistry data to evaluate hydrocarbon potential of the carbonate reservoirs in Tatarstan, Russia

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## Abstract

© SGEM2018. The article describes the results of the integration of the geochemical and seismic data on one of the oilfields of Tatarstan Republic in Russian Federation. The complex geological structure of the oil bearing formations of Carboniferous age results in misinterpretation of the geophysical data and drilling of the dry wells. Some potential structural oil traps find from the seismic data interpretation are water bearing. To avoid nonproductive drilling authors studied seismic faults and their connection with the geochemical anomalies. On the first step the faults in the potential oil-bearing formation of the Tournaisian age were traced in the 2D seismic lines. Then the geochemical parameter (propane concentration in the soils) was studied in 90 observation points. The gas anomaly represented by propane is indicative, because the biochemical genesis of methane homologues is practically excluded, and their content in coal is insignificant. That means that the increased content of propane is connected with the presence of hydrocarbons. It appears that in the presents of oil in the formation geochemical anomaly and the fault in the Tournaisian formation are coincide. That can be used as additional source of information to avoid nonproductive drilling.

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## Keywords

Geochemical anomalies, Seismic data, Seismic faults

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