



Contribution ID: 613

Type: **Poster (+) Presentation**

A modified pulse-decay approach to simultaneously measure permeability and porosity of tight rocks

Friday, 4 June 2021 09:40 (1 hour)

Permeability and porosity are two most important parameters of rocks for evaluation and exploitation of oil/gas reservoirs. In this study, a modified pulse-decay method has been developed to measure both permeability and porosity simultaneously. In the proposed method, the gas pressure in one chamber is changed (increased or decreased) instantaneously and then maintains constant, while the pressure response changing with time in the other one is monitored. A mathematical model of this procedure has been formulated, and a general analytical solution has been obtained. The late-time solution is presented for post processing of experimental data, which leads to measurements of permeability and porosity values of tight rocks simultaneously. Our measurements agree well with those from the classical pulse decay and gas expansion methods. The proposed method can reduce the total test time and ensure the permeability and porosity are measured under the same effective stress condition.

Time Block Preference

Time Block B (14:00-17:00 CET)

References

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Student Poster Award

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