

Petrophysical Modeling of Synthetic Carbonate Rocks with Siliceous Cementation

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Silica precipitation is a natural process occurring during sedimentation and diagenesis and can be associated locally with hydrothermal volcanic rock activities, while these rocks release silica. (Teboul, 2019). Investigation of Samples of these rocks aiming to improve the understanding of processes as rock-fluid interaction, diagenesis impact, porosity heterogeneities and their correlation with elastic velocities and permeability, anisotropy effects and heterogeneity, among others. However, the removal of natural rock rocks from the well is a costly operation, which encourages the search for an alternative source of rock samples for laboratory investigations. In this way, to consolidate rocks in the laboratory with characteristics similar to natural ones can help to overcome the economical inability to extract samples in loco. The synthesis of carbonate rocks aims to simulate natural rocks used in the characterization of carbonate reservoirs. In this way, the artificial production of rocks allows the performance of destructive tests, access to samples with pre-determined characteristics and low cost. Several studies in the literature have examined the synthetic technique of reservoir rocks. (Klimentos and Parker, 1988, Holt et al., 1993, Sherlock and Siggins, 2003, Niraula, 2004, Delle Piane et al., 2015, Husseiny, 2015, Figueiredo, 2017, Fedrizzi, 2018). However, there are no publications describing techniques for the synthesis of carbonate rocks with silica cementation. Thus, this is the objective of this work: To synthesize carbonate rocks with siliceus cementation to perform tests.

Palavras-chave: Carbonate Rocks, Siliceous Cementation, Petrophysical Modeling

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