Compositional Classification for Fine-Grained Sediments and Sedimentary Rocks: Foundation of Porosity Prediction

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Abstract

A proposed classification for fined-grained sedimentary materials is described, based on the composition of the detrital grain assemblage. Grain assemblages of differing compositions differ in their response to changing chemical and physical conditions in the subsurface and this in turn affects the evolution of important bulk rock properties. Prediction of bulk rock properties has important ramifications for exploration in fine-grained sedimentary systems and accurate determination of grain assemblage composition in these rocks is an important first step in the development of exploration models in these rocks.