In this paper we present an approach based on a fuzzy clustering algorithm applied for lithofacies classification in an unconventional tight-sand reservoir from well-logs data. In some cases, these kinds of reservoirs are ra-dioactive due to the presence of non clayey radioactive minerals. However, conventional methods can give bad results. For that, artificial intelligence such as Fuzzy logic, can be suitable to solve the problem. Fuzzy clustering is an unsupervised machine learning technique where a given set of data is classified into groups. Hence, fuzzy logic is a more general logic then classical logic because it does not ignore uncertainties and accepts the implicit consideration of the inherited error associated with any physical measurement. This techniquet has been applied to real data of one well in an unconventional tight-sand reservoir in the Algerian Sahara. Predicted results are compared to lithofacies obtained from conventional methods and spectral mineralogical well-logs data
Keywords: Well-log, Unconventional Tight reservoir, Lithofacies, Fuzzy logic, Clustering