

Robust committee machine for water saturation prediction.

ABSTRACT

Water saturation is one of the important physical properties of the petroleum reservoir which are usually determined by core analysis. An accurate determination of this parameter is significant to execute a realistic evaluation of hydrocarbon reserves in the formation and also decreasing the economic risk. In this study, a robust technique is proposed to determine an accurate value of this parameter from well log data in un-cored well or at un-cored interval of the same well by combining different types of machine learning techniques. The final results (sub-CM outputs) demonstrated that integrating these techniques using proposed method provides an accurate, fast and cost-effective method for estimating the target value.

Keyword: committee machine genetic algorithm fuzzy logic neural network neural fuzzy watersaturation