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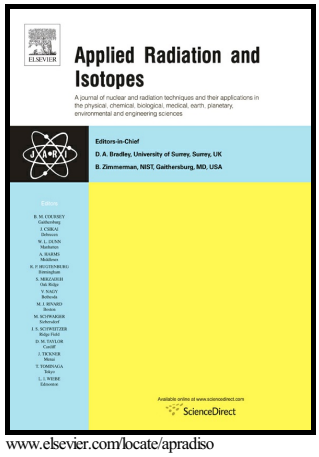

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Self Organizing Map Neural Networks Approach For Lithologic Interpretation of Nuclear and Electrical Well Logs In Basaltic Environment, Southern Syria

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PII: S0969-8043(17)31202-2
DOI: https://doi.org/10.1016/j.apradiso.2018.03.008
Reference: ARI8291

To appear in: *Applied Radiation and Isotopes*

Received date: 17 October 2017
Revised date: 21 February 2018
Accepted date: 9 March 2018

Cite this article as: J. Asfahani, Z. Ahmad and B. Abdul Ghani, Self Organizing Map Neural Networks Approach For Lithologic Interpretation of Nuclear and Electrical Well Logs In Basaltic Environment, Southern Syria, *Applied Radiation and Isotopes,* https://doi.org/10.1016/j.apradiso.2018.03.008

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Self Organizing Map Neural Networks Approach For Lithologic Interpretation of Nuclear and Electrical Well Logs In Basaltic Environment, Southern Syria

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HIGH LIGHTS

Test and apply self organizing map (SOM) neural network approach as a suitable tool for interpreting nuclear and electrical well logging data of Kodana well in Southern Syria.
Distinguish different kinds of basalt.
Derive the lithological Cross section of the interpreted well.

Abstract

An approach based on self organizing map (SOM) artificial neural networks is proposed herewith oriented towards interpreting nuclear and electrical well logging data. The well logging measurements of Kodana well in Southern Syria have been interpreted by applying the proposed approach. Lithological cross-section model of the basaltic environment has been derived and four different kinds of basalt have been consequently distinguished. The four basalts are hard massive basalt, hard basalt, pyroclastic basalt and the alteration basalt products- clay. The results obtained by SOM artificial neural networks are in a good agreement with the previous published results obtained by other different techniques. The SOM approach is practiced successfully in the case study of the Kodana well logging data, and can be therefore recommended as a suitable and effective approach for handling huge well logging data with higher number of variables required for lithological discrimination purposes.

Key.words: Neural network technique, Nuclear well logging, Electrical well logging, Basalt, Syria.

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