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Predictive Maintenance to Reduce the Total Cost of Ownership of Oil and Gas Downhole Tools

Downhole oil and gas tools are used to conduct measurement and acquire samples for oil reserves estimation. Current tools are exhibiting failures in the field. We propose the use of predictive maintenance (PdM) to avoid or mitigate the risk of failures and decrease the total cost of ownership of coring tools. Each tool will go through a surface screening test where data is collected and compared with a statistical health profile to make a “go/no go” test. The objective of the work is to identify the relationship between numerical data and failure data through unsupervised clustering and anomaly detection and identify patterns in the numerical data leading to failures. This will assist in diagnostics and can potentially lead to prognostics when features of impending failures are identified.

Special/ Invited session

Classification

Both methodology and application

Keywords

ANN, predictive maintenance, oil and gas, downhole tools.

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