

## عنوان مقاله:

Cutting Removal Modeling for Deviated and Horizontal Wellbores by Artificial Neural Network

**محل انتشار:** سومین کنگره ملی مهندسی نفت (سال: 1390)

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## خلاصه مقاله:

Cutting transport in directional and horizontal well has been studied for many years. It has been a great concern to predict critical transport fluidvelocity (CTFV) and annular cutting concentration (Cc) to avoid cutting bedformation and prevent several drilling problems. In this study two artificial neural network (ANN) models using experimental data from a number of comprehensive tests in cutting transport flow loops has been developed topredict CTFV and Cc for directional and horizontal wells. Including the effects of pipe rotation and eccentricity, the ANN model modeled the for Cc. Mean square error (MSE) for CTFV is o.At for CTFV and o.95 casewith a correlation coefficient value of about for Cc. Thestatistical error analysis results obtained by the models indicate that ANN model is o.oF and o.ooY a value of successful in predicting CTFV and Cc. CTFV model is suitable forall inclination angles and for both Bingham and Power law fluids, low value of relative error and consideration of all effective parameters on CTFV are some of the model preferences to conventional models

كلمات كليدى:

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