عنوان مقاله:

PREDICTION OF NATURAL OIL FLOW THROUGH WELLHEAD CHOKES USING RADIAL BASIS FUNCTION NETWORK

محل انتشار:

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خلاصه مقاله:

Two-phase flow through choke valves occurs in almost all producing oil and gas wells. Wellhead chokes control flow rate to prevent water and gas coning, to avoid sand problems andprotecting surface facilities. Prediction of liquid flow rate is significantly important in production engineering and bean size design. In this paper, radial basis function network (RBFN) is established for predicting oil flow rate in two-phase flow through wellhead chokes. Particle swarm optimization (PSO) is used to set tuning parameters of RBFN model. Model inputs include choke upstreampressure, gas-liquid ratio and choke sizes which are surface measurable variables. Predicted flow ratesfrom RBFN are remarkably compatible with actual measured rates. The performance of the RBFN model has also been compared with related empirical correlations. The results indicate the robustness and superiority of the RBF model

کلمات کلیدی:

Choke, Flow rate prediction, Radial basis function, Particle swarm optimization

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