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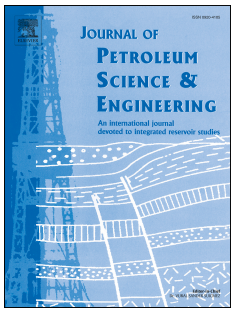

Predictive model for bottomhole pressure based on machine learning

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Highlights:

- The neural network is constructed to predict the essentially transient bottomhole pressure in the problem of multi-phase wellbore flow.
- The model can learn to use the geometry information and predict the transient BHP values for different geometries.
- It is demonstrated that the model is capable of predicting the BHP even in the slug flow regime.
- In most considered cases, the mean NRMSE value was below 5% and the 95%-quantile did not exceed 7%.
- The model trained on original data without noise was applied to predict the BHP for the test dataset containing noise. Although average error increased, the model was capable of capturing the basic features of the noisy transient BHP behavior.