ANN permeability @model

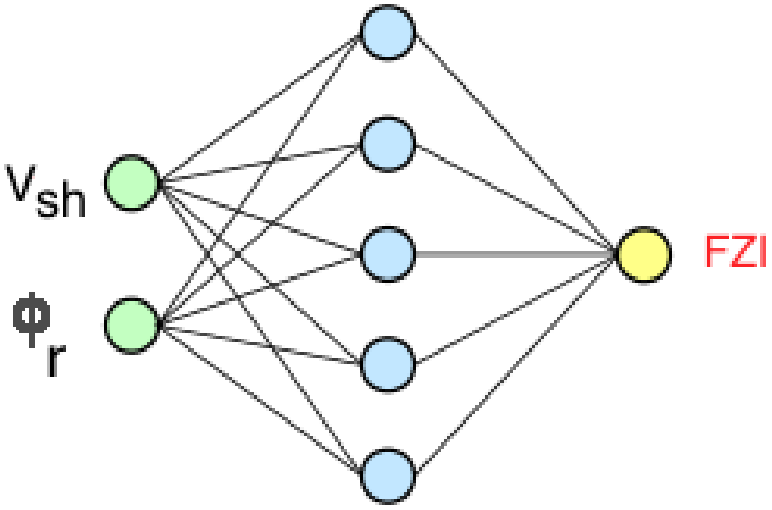
(1) $$k = 1014.24 \cdot FZI^2 \cdot \frac{\phi^3}{(1-\phi)^2}$$

where

ϕ	effective porosity
FZI	Flow Zone Indicator

with Flow Zone Indicator having a Artificial Neural Network Regression on porosity and shaliness:

(2) $$FZI(V_{sh}, \phi_r) = ANN[V_{sh}, \phi_r]$$



for each lithofacies individually.

This model is very flexible in adapting to the input data and may pick up the correlation when Dual-component Cozeny-Karman permeability @model fails.

See also

Petroleum Industry / Upstream / Subsurface E&P Disciplines / Petrophysics / Absolute permeability / Absolute permeability @model

Artificial Neural Network Regression