

WOR vs WOBR @model

Correlation between Water-Oil-Ratio (WOR) and Water Oil Balance Ratio (WOBR):

$$WOR = \Phi \left(\frac{\Omega_W^\downarrow \cdot Q_W^\downarrow - \Omega_W^\uparrow \cdot Q_W^\uparrow}{EUOR - Q_O^\uparrow} \right)$$

where $\Phi()$ is some function.

For example, one can select $\Phi(x) = x^n$ and search for the exponent n , good water percentages Ω_W^\downarrow , Ω_W^\uparrow and even adjust $EUOR$ in order to achieve the best model $WOR^*(t)$ fit to the [WOR](#) history:

$$\sum_t \|WOR(t) - WOR^*(t)\| \rightarrow 0$$

$$WOR^*(t) = \left[\frac{\Omega_W^\downarrow \cdot Q_W^\downarrow(t) - \Omega_W^\uparrow \cdot Q_W^\uparrow(t)}{EUOR - Q_O^\uparrow(t)} \right]^n$$

where $\|x\|$ is the norm of x .

See Also

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