

9-cell formation pressure estimate @model

Average of numerically calculated pressure values in 9-cell grid area A_{e9} of reservoir flow simulation model (see also Fig. 1 below):

(1)
$$p_{e9}(i,j) = \frac{1}{9} \cdot \left(\sum_{k=i-1}^{i+1} \sum_{l=j-1}^{j+1} p_{k,l} \right)$$

or in explicit form:

(2)
$$p_{e9,i,j} = \frac{1}{9} \cdot \left(p_{i,j} + p_{i,j+1} + p_{i,j-1} + p_{i-1,j} + p_{i+1,j} + p_{i-1,j-1} + p_{i+1,j+1} + p_{i-1,j+1} + p_{i+1,j-1} \right)$$

$p_{i-1,j+1}$	$p_{i,j+1}$	$p_{i+1,j+1}$
$p_{i-1,j}$	$p_{i,j}$	$p_{i+1,j}$
$p_{i-1,j-1}$	$p_{i,j-1}$	$p_{i+1,j-1}$

Fig. 1. Averaging schematic around 9-grid area.