Cross-phase fluid exchange @model

Given

> a mixture of fluid components $C = \{1...n\}$ with total mass of each component m_C (assumed to stay constant during dynamic processes)

and

> fluid phases ($\alpha = \{1...m\}$) sharing the same volume under pressure p and temperature T

then in thermodynamic equilibrium the total mass of C-component will decompose into a sum of fluid components:

(1) $$m_C = \sum_\alpha m_{C\alpha}(p,T)$$

where

$m_{C\alpha}(p,T)$	mass of C-component in α-phase as a function of pressure p and temperature T

This may alternatively rearranaged as:

(2) $$m_C = \sum_\alpha R_{C\alpha}(p,T) m_\alpha(p,T)$$

where

$R_{C\alpha}(p,T)$	cross-phase exchange coefficient of C-component in α-phase as a function of pressure p and temperat ure T
$m_\alpha(p,T)$	total mass of α-phase as a function of pressure p and temperature

See Also

Petroleum Industry / Upstream / Subsurface E&P Disciplines / Fluid (PVT) Analysis

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