

Multi-phase pressure diffusion

In majority of practical well tests the [pressure diffusion](#) in multi-phase segregation of reservoir flow the pressure response can be approximated by [single-phase pressure diffusion model](#) with a specific form of fluid/reservoir properties.

This approximation can be done in one of three ways:

Linear Perrine multi-phase diffusion	the simplest multi-phase fluid model although it has a 3-phase form it normally works for oil-water system only
Pseudo-linear multi-phase diffusion	this model is capable to account for highly compressible multi-phase fluid components (light oil, condensate and gas) and • in case of high drawdown it does not model pressure accurately both in near and far reservoir zone • requires analyst to select a reference pressure point where the pressure simulation will be more accurate
Non-linear multi-phase diffusion	this multi-phase fluid model covers a wide range of 2-phase and 3-phase models in a wide range of pressure variations and • it does not account for capillary pressure • it does not cover the segregated gas-liquid reservoir flow

See also

[Pressure diffusion](#) / [Pressure Diffusion @model](#)