

Pore compressibility pressure @model

In many practical cases the [pore compressibility](#) can be considered as independent on [reservoir pressure](#) variation:
 $c_{\phi}(p) = c_r \cdot \phi = \text{const.}$

But in case the [reservoir pressure](#) is changing substantially one may need to account for the effect it takes on [pore compressibility](#).

The [model](#) usually relates [pore compressibility](#) $c_{\phi}(p)$ to a given pressure p and [initial pore compressibility](#) $c_{\phi i}$ at [initial formation pressure](#) p_i .

	Name /Author	Scope
(1) $c_{\phi}(p) = c_{\phi i} \cdot \frac{\ln\left(\frac{p_n}{p_{\max}}\right)}{\ln\left(\frac{p_{ni}}{p_{\max}}\right)}$ (2) $p_n = p_{\min} + 1.75 \cdot \phi^{0.51} \cdot (p_{\max} - p)$ (3) $p_{ni} = p_{\min} + 1.75 \cdot \phi^{0.51} \cdot (p_{\max} - p_i)$	Dobrynin	Sandstone Wide pressure range: $p_{\min} = 1 \text{ MPa} < p < p_{\max} = 200 \text{ MPa}$

See also

[Petroleum Industry / Upstream / Subsurface E&P Disciplines / Petrophysics / Geomechanical Rock Modelling / Pore compressibility](#)