

DCA Duong @model

[@wikipedia](#)

Duong mathematical model of [Decline Curve Analysis](#) is based on the following equation:

(1)	$q(t) = q_0 \cdot t(a, m) + q_\infty$	daily production rate
(2)	$Q(t) = q_0 \cdot t(a, m) \cdot \frac{t^m}{a}$	cumulative production $Q(t) = \int_0^t q(t)dt$
(3)	$t(a, m) = t^{-m} \cdot \exp\left[a \cdot \frac{t^{1-m} - 1}{1 - m}\right]$	

See Also

[Petroleum Industry](#) / [Upstream](#) / [Production](#) / [Subsurface Production](#) / [Field Study & Modelling](#) / [Production Analysis](#) / [Decline Curve Analysis](#)

References

Duong, A.N. 2011. Rate-Decline Analysis for Fracture-Dominated Shale Reservoirs. SPE Reservoir Evaluation & Engineering 14(3): pp. 377-387. DOI: 10.2118/137748-pa