

DCA ANN @model

[@wikipedia](#)

One of mathematical models of [Decline Curve Analysis](#) based on the following equations:

$(1) \quad q(t) = q_0 \cdot \exp\left[-\int_0^t D(Q(t)) dt\right]$	$(2) \quad D(Q) = \text{ANN}(Q)$
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where

$q_0 = q(t = 0)$	Initial production rate of a well (or groups of wells)
$D(t) = -\frac{dq}{dQ}$	Production decline rate
$Q(t) = \int_0^t q(t)dt$	cumulative production
$\text{ANN}(Q)$	artificial neural-network regression of Production decline rate D on cumulative production Q

[DCA ANN](#) is an empirical correlation for production from both finite-reserves $Q_{\max} \leq \infty$ or infinite-reserves $Q_{\max} = \infty$ r eservoirs.

See Also

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

[[DCA Arps @model](#)] [[Production decline rate](#)]