

Figure 1

a

$$y' = \frac{dy}{dt} = ky \left(1 - \frac{y}{b}\right)$$

$$y(t) = \frac{bCe^{kt}}{b + Ce^{kt}} \quad C = \frac{y_0}{\left(1 - \frac{y_0}{b}\right)e^{kt_0}}$$

$$t_{\text{switch}} = \frac{\ln\left(\frac{b}{y_0} - 1\right)}{k} + t_0$$

b

Switchers

$t_{\text{start}} < t_{\text{switch}} < t_{\text{end}}$

c

Accelerators

$t_{\text{switch}} > t_{\text{end}}$

d

Decelerators

$t_{\text{switch}} < t_{\text{start}}$

Increasing patterns
 $k > 0$

Decreasing patterns
 $k < 0$

