

**Ref**  
Graupner 2016

**Region**  
Cortex

**Bounds**  
Soft

**Fit**

### Equation

$$\frac{dx}{dt} = -\frac{x}{\tau_+} + \delta(t_{pre} - t)$$

$$\frac{dx_2}{dt} = -\frac{x_2}{\tau_x} + \delta(t_{pre} - t)$$

$$\frac{dy}{dt} = -\frac{y}{\tau_-} + \delta(t_{post} - t)$$

$$\frac{dy_2}{dt} = -\frac{y_2}{\tau_y} + \delta(t_{post} - t)$$

$$w_{updated} = w + x(t)(1 - w)(A_2^- + A_3^- y_2(t - \varepsilon)) \quad \text{if } t = t_{post}$$

$$w_{updated} = w - y(t)w(A_2^+ + A_3^+ x_2(t - \varepsilon)) \quad \text{if } t = t_{pre}$$

$$\tau_w \frac{dw}{dt} = (w_{updated} - w)$$

### Parameters

$$A_2^+ = 0$$

$$\tau_+ = 16.8$$

$$A_2^- = 0$$

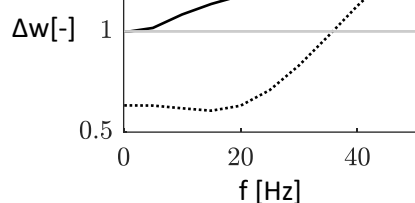
$$\tau_- = 33.7$$

$$A_3^+ = 0.016574$$

$$\tau_x = 0$$

$$A_3^- = 0.0082647$$

$$\tau_y = 56.3823$$



### Reset

