


## Tsodyks-Uziel-Markram model

$$\tau_m \frac{dV_i}{dt} = V_{rest} - V_i + R_m I_{syn}$$

$$I_{syn} = \frac{1}{R_m} \sum_j w_{ji} Y_{ji}(V_{rev} - V_i)$$

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Membrane  
leak time


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## Tsodyks-Uziel-Markram model

Membrane  
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Membrane  
resistance

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Synaptic  
Current  $\longrightarrow$

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Synaptic Current  $\longrightarrow I_{syn} = \frac{1}{R_m} \sum_j w_{ji} Y_{ji} (V_{rev} - V_i)$

Coupling strength i to j

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Coupling strength i to j

Active Transmitters

The diagram shows the Tsodyks-Uziel-Markram model equations. The first equation,  $\tau_m \frac{dV_i}{dt} = V_{rest} - V_i + R_m I_{syn}$ , is annotated with a blue arrow pointing to  $\tau_m$  labeled 'Membrane leak time' and a red arrow pointing to  $R_m$  labeled 'Membrane resistance'. The second equation,  $I_{syn} = \frac{1}{R_m} \sum_j w_{ji} Y_{ji} (V_{rev} - V_i)$ , is preceded by 'Synaptic Current' with an arrow pointing to  $I_{syn}$ . A green arrow points from 'Coupling strength i to j' to  $w_{ji}$ , and a yellow-green arrow points from 'Active Transmitters' to  $Y_{ji}$ .

# Tsodyks-Uziel-Markram model

The diagram illustrates the Tsodyks-Uziel-Markram model with two equations and several color-coded annotations:

- Membrane leak time** (blue text and arrow) points to  $\tau_m$  in the first equation.
- Membrane resistance** (red text and arrow) points to  $R_m$  in the first equation.
- Reversal potential** (red text and arrow) points to  $V_{rev}$  in the second equation.
- Coupling strength i to j** (green text and arrow) points to  $w_{ji}$  in the second equation.
- Active Transmitters** (yellow-green text and arrow) points to  $Y_{ji}$  in the second equation.
- Synaptic Current** (black text and arrow) points to  $I_{syn}$  in the second equation.

$$\tau_m \frac{dV_i}{dt} = V_{rest} - V_i + R_m I_{syn}$$
$$I_{syn} = \frac{1}{R_m} \sum_j w_{ji} Y_{ji} (V_{rev} - V_i)$$