

**A**

■ inhibition  
■ excitation

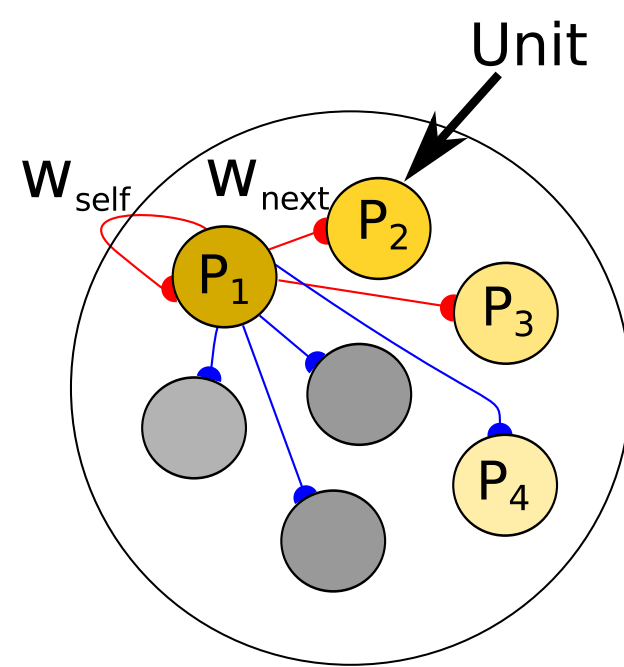
— cue

—  $P_1$

—  $P_2$

—  $P_3$

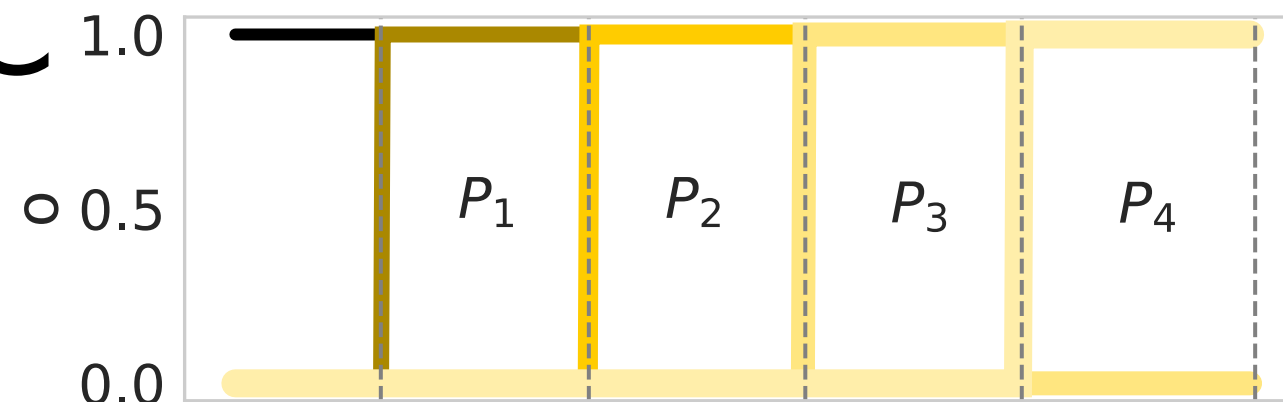
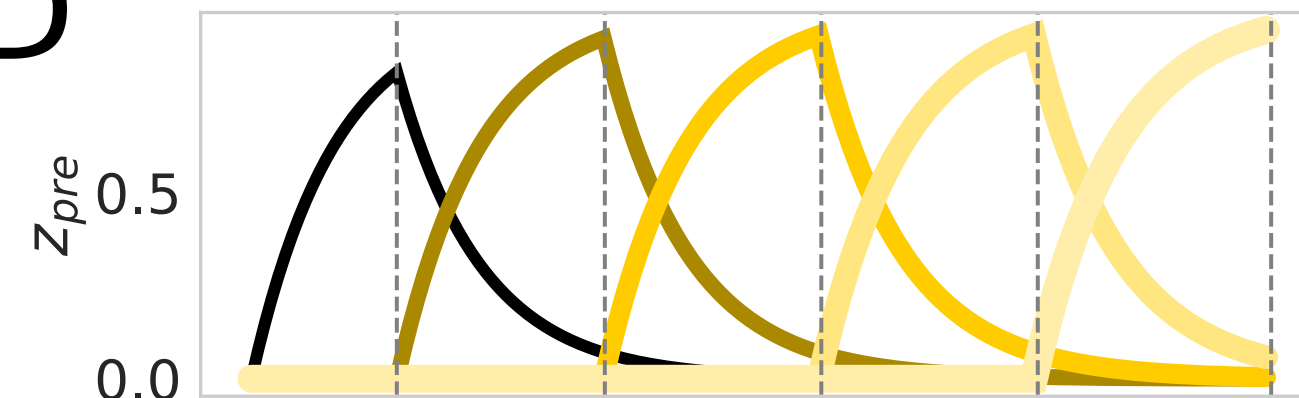
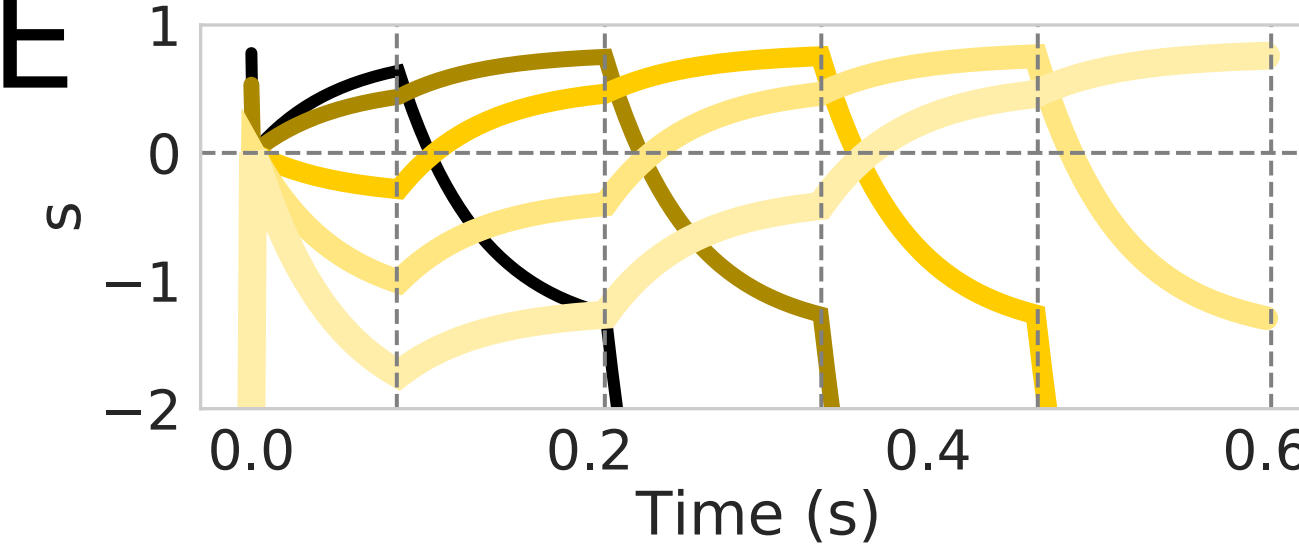
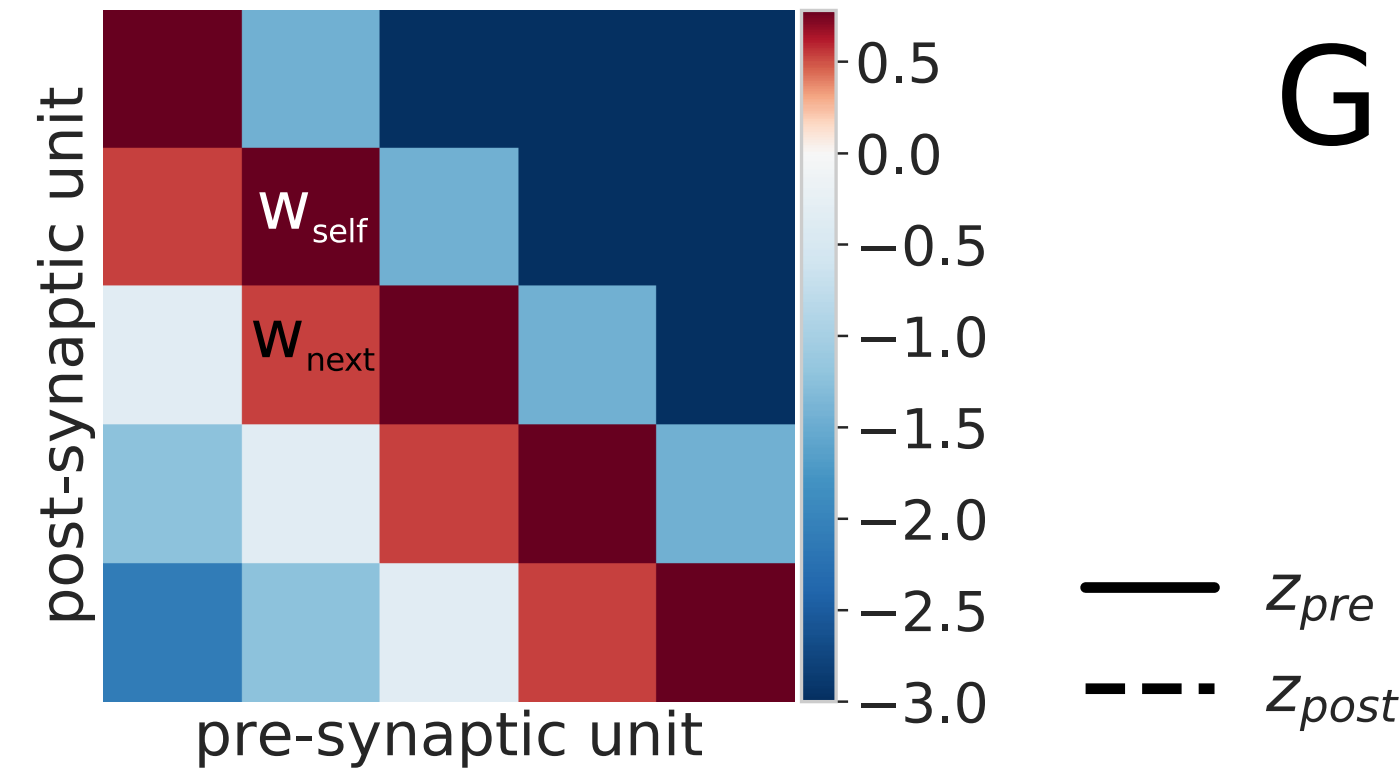
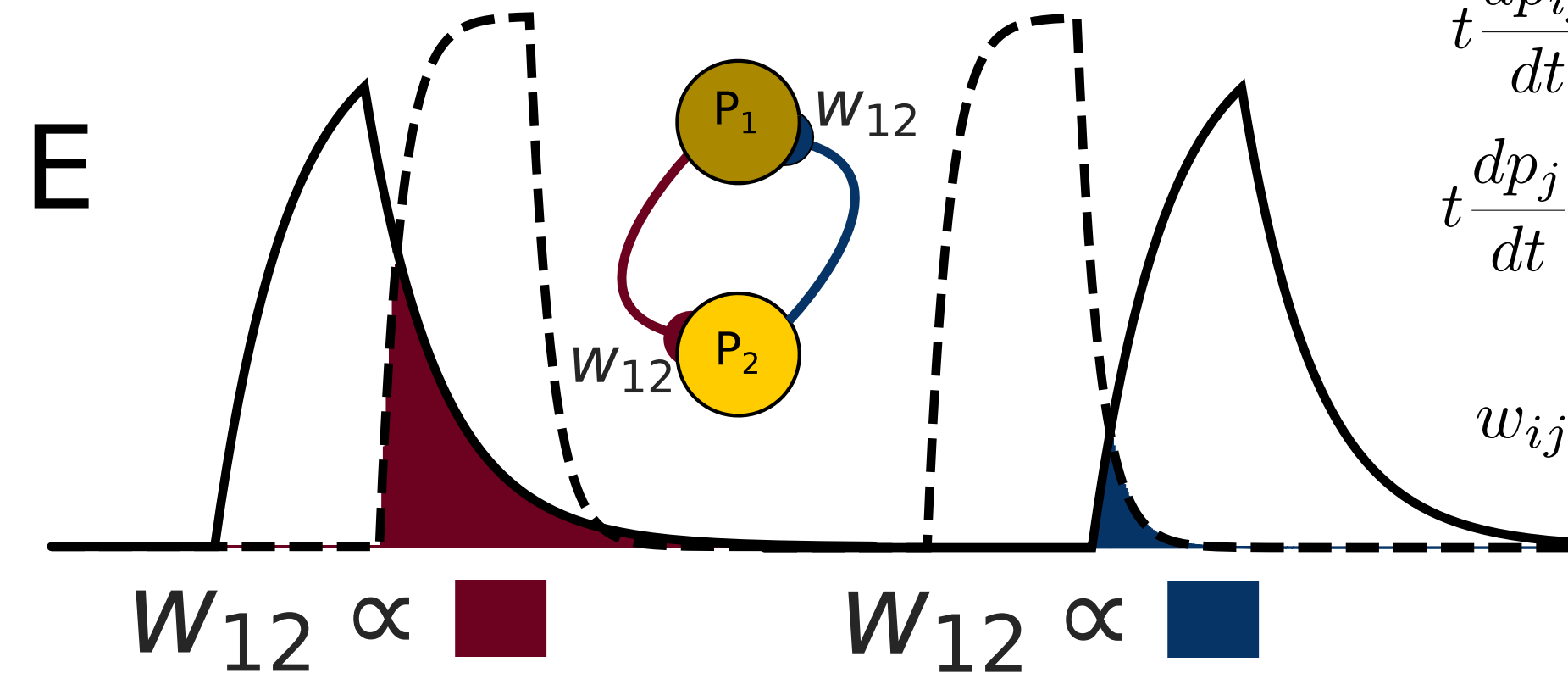
—  $P_4$

**B**

$$\tau_s \frac{ds_i}{dt} = \sum w_{ij} z_j - g_a a_i - s_i + \sigma d\xi(t)$$

$$o_i = \begin{cases} 1, & s_i = \max_{hypercolumn} (s), \\ 0, & \text{otherwise} \end{cases}$$

$$\tau_a \frac{da_i}{dt} = o_i - a_i$$

**C****D****E****F****G****H**

$$\tau_{z_{pre}} \frac{dz_i}{dt} = o_i - z_i$$

$$\tau_{z_{post}} \frac{dz_j}{dt} = o_j - z_j$$

$$t \frac{dp_i}{dt} = z_i - p_i$$

$$t \frac{dp_{ij}}{dt} = z_i z_j - p_{ij}$$

$$t \frac{dp_j}{dt} = z_j - p_j$$

$$w_{ij} = \log \left( \frac{p_{ij}}{p_i p_j} \right)$$