

Outline of replication of Richardson *et al.* (2003)

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1 Noisy input

1.1 Synaptic noise

$$I_{syn} = g_e(t)(V - E_e) + g_i(t)(V - E_i) \quad (1)$$

$$\tau_e \frac{d}{dt} g_e = g_{e0} - g_e + \sigma_e \sqrt{2\tau_e} \xi_e(t) \quad (2)$$

1.2 White noise

2 Spiking neuron models

2.1 Generalized integrate-and-fire model

2.2 Conductance-based models

2.2.1 Model I. Neuron with I_h

2.2.2 Model II. Neuron with I_{Kslow}