

Description of Additional Supplementary Files

File Name: Supplementary Movie 1

Description: Traveling waves were present in waking spontaneous activity in behaving marmosets. 100 ms of spontaneous activity recorded from a Utah multi-electrode recording array chronically implanted in area MT of a common marmoset. The marmoset was holding fixation awaiting the appearance of a faint visual target. The spatial extent of the recording covered 3.2 x 3.2 mm.

File Name: Supplementary Movie 2

Description: The randomly connected spiking network model produced noisy homogeneous LFP fluctuations across the spatial extent of the network. 200 ms of spontaneous activity in a randomly connected large-scale spiking network model as described in Figure 2. Each pixel is the amplitude of the LFP calculated from synaptic activity in each 10x10 neuron pool.

File Name: Supplementary Movie 3

Description: The topographically connected spiking network model produced heterogeneous LFP fluctuations that travel as waves across the spatial extent of the network. 200 ms of spontaneous activity in a topographically connected large-scale spiking network model described as in Figure 2. The distance-dependent connections were formed from a 2D Gaussian with $\sigma = 400 \mu\text{m}$ and the conduction velocity was 0.2 m/s.

File Name: Supplementary Movie 4

Description: Wavelengths are shorter in a network with a smaller Gaussian σ . 200 ms of spontaneous activity in a topographically connected large-scale spiking network with a Gaussian σ of 200 μm and a conduction velocity of 0.2 m/s.

File Name: Supplementary Movie 5

Description: Wavelengths are longer in a network with a larger Gaussian σ . 200 ms of spontaneous activity in a topographically connected large-scale spiking network with a Gaussian σ of 600 μm and a conduction velocity of 0.2 m/s.