The Journal of Neuroscience

The Official Journal of the Society for Neuroscience

August 1995
Volume 15 Number 8

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Cover picture: Orientation selectivity exhibited by a model visual cortical circuit featuring strong, recurrent excitation. *Above and below,* Simulated intracellular responses of a model neuron to flashed bar stimuli oriented at 0°, 22.5°, 45°, and 90°. The cell shows sharp selectivity for 0° stimuli. *Center,* Mean orientation tuning properties of a cluster of neurons ($n = 84$) that prefer 0° stimuli, as a function of cortical synaptic strengths (*vertical axis,* excitatory; *horizontal axis,* inhibitory). *Symbol shape* represents mean orientation tuning bandwidth, and *symbol shading* represents mean response amplitude. The *lower left oval* is the feedforward control. The band of thin, *yellow ovals* along the diagonal indicates that sharp orientation tuning and response amplification were achieved, provided that cortical excitation and inhibition were approximately balanced. Too much inhibition attenuated response amplitudes (*dark ovals*), while too much excitation amplified responses to all orientations and disrupted selectivity (*yellow circles*). Note that increasing excitatory strengths from low levels produced both sharper tuning and stronger responses. See Somers et al., pp. 5448–5465.