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University of California, Davis, CA 95616. *Synchrony in networks of Cortical Fast-Spiking  
Neurons*. Preliminary report.

Fast-spiking (FS) cells in layer IV of the cerebral cortex receive direct thalamocortical (TC) input and provide feed-forward inhibition onto layer IV excitatory cells. The level of synchronous firing of the FS cells can play an important role in shaping the response of the full layer IV cortical network to sensory stimuli. Two factors that contribute to the synchrony are correlated TC input and electrical coupling between FS cells. We show that these two factors can act synergistically to increase synchrony, and we examine the underlying mechanisms. (Received September 23, 2005)