1014-45-1218 Fernanda Botelho* (mbotelho@memphis.edu), Department of Mathematical Sciences, University of Memphis, Memphis, TN 38152, James E Jamison (jjamison@memphis.edu), Department of Mathematical Sciences, University of Memphis, Memphis, TN 38152, and Angela J Murdock (jmurdock@memphis.edu), Department of Mathematical Sciences, University of Memphis, Memphis, TN 38152. Contructing Pulse Solutions for Neural Networks Models. Preliminary report.

We study the existence and stability of pulse stationary solutions of an integro-differential equation that models the coarse-grained averaged activity of a single layer of interconnected neurons. The neuronal connections considered are laterally oscillatory with an exponential rate of decay and variable phase. We identify regions in the parameter space where solutions exhibit persistent areas of excitation with single and dimpled pulses. (Received September 27, 2005)