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Jonathan E Rubin* (rubin@math.pitt.edu), Department of Mathematics, University of Pittsburgh, 301 Thackeray Hall, Pittsburgh, PA 15260, and **Amitabha Bose**, Department of Mathematical Sciences, NJIT. *The geometry of oscillator recruitment.*

In a coupled network of excitable elements that are initially at rest, the application of a transient, spatially localized stimulus can lead to the propagation of activity throughout the network, a small burst of activity that dies out, or an intermediate state of sustained, localized activity. For propagation to result, silent elements must be recruited to become active. This recruitment can fail through the build-up of inhibitory coupling, but even without inhibition, it can fail through the desynchronization of active cells. We give a geometric dynamical systems analysis of the degree of desynchronization needed for the onset of recruitment failure in networks composed of certain types of elements, corresponding to some particular neuronal models, coupled via synaptic excitation. (Received September 19, 2005)