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Title: Networks of heterogeneous neural oscillators

Abstract: Heterogeneity is a realistic physiological attribute neglected in many mean field models. To this end, we consider pulse-coupled noisy phase oscillators that have distinct/heterogeneous phase resetting curves (PRC). A full probability density or mean field description of this system is inherently large dimensional, requiring reduced descriptions for tractability. We present some preliminary results of reduction methods to capture various statistical quantities and explore their robustness. Using asymptotic methods, we also analyze how the variability of the time between spikes changes with coupling. A straightforward explanation is provided for how pulse-coupling and PRC type alter the variability in a heterogeneous network.