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Mean Field Analysis of Networks of Neurons

We use mean field analysis to study the behaviour of networks of all-to-all pulse-coupled neurons. The individual neurons are represented using a class of two-dimensional integrate and fire model. The mean field model is a system of switching ordinary differential equations, which can undergo both standard and nonsmooth bifurcations. The results of the mean field analysis are compared with numerical simulations of large networks. This is joint work with Wilten Nicola.