

Synchronous patterns in networks

Miriam Manoel¹

¹ ICMC - USP

This talk shall begin with an overview of the power of graph theory and symmetric bifurcation theory to analyse schematic aspects of networks. One of my recent interests lies in the mathematical models related to the synchronous behaviour of connected neuronal cells in the brain. These are expected to be coupled systems defined in very high dimensions associated with graphs with very high number of vertices. On the other hand, they are problems that in general possess symmetries, and our symmetry methods provide results to be applied to a large class of models as long as they have the same symmetry. Inspired by a recent work by I. Stewart and M. Golubitsky, two 4-node Wilson networks are presented here for visual illusions in the Necker cube and rabbit/duck image.