Synchronization in the Kuramoto model

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One interesting class of ODE:s related to topics such as the brain, fireflies and people walking on bridges are networks of oscillators. Such networks exhibit interesting non-transient behaviors. However, the systems can generally not be solved exactly due to their complexity and size. In this talk, some classic results concerning the collective behavior of one such model - the Kuramoto model - are presented. These results are related to the tendency of oscillators in such a system to synchronize. Specifically, focus will be put on the system's ability to partially synchronize, and on the bifurcation that characterizes this behavior.