
Summary: “The Kuramoto model describes the synchronization of a heterogeneous population of oscillators through a stationary homogeneous network in which oscillators are coupled via their phase differences. Recently, there has been interest in studying synchronization on time-varying networks, and time-varying generalizations of the Kuramoto network, in particular. Previous results indicate that networks with fast dynamics may be as efficient as static networks at promoting synchrony. In this paper we use optimal control theory to study synchronization on a time-varying Kuramoto network. Our results indicate that time-varying networks can be more efficient than static networks at promoting synchrony and show that fast network dynamics are not necessary for efficiency. In particular, we show that, near the synchronization threshold, time-varying networks can promote synchrony through slow oscillations that lengthen the duration of high synchrony states and shorten the duration of low synchrony states. Interestingly, repulsion is an essential feature of these optimal dynamic networks.”

References

10. Q. Ren, J. Zhao, Adaptive coupling and enhanced synchronization in coupled phase


Note: This list reflects references listed in the original paper as accurately as possible with no attempt to correct errors.