



# Research of Synchronization for Social Network with Local Bridge by Coupled Rulkov Maps

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## Abstract

Understanding dynamics of social network is important because “social network analysis” has been used not only for analyzing modern society but also for physics, biology and information science by many researchers. The social network is structure which shows social relation, e.g. aerial line, infection with a virus, World Wide Web and so on.

In this study, we focus on “local bridge” [1] which is one of phenomena in social network. We investigate influence of the local bridge in the social network by synchronization phenomena of Rulkov maps [2] applying for coupled maps. From simulation results, the propagation wave switches between full synchronization and clustering by the local bridge.

## REFERENCES

- [1] M.S. Granovetter., “The Strength of Weak Ties”, *Amerian Journal of Sociology*, vol. 78, pp 1360-1380, 1973.
- [2] N.F. Rulkov, “Modeling of Spiking-Bursting Neural Behavior using Two-dimensional Map,” *Physical Rev., E*, vol. 65, 2002.