

PP0

Identifying Coupling Types from Observed Data

Identifying coupling types is a key technique to investigate interactions within coupled systems. There are a lot of existing methods for identifying directional couplings between two elements but there are few methods which can identify influence of a common third element and provide a significance level. In this poster, we propose such a method using recurrence plots as tools. The proposed method is robust against observational noise. We apply it to artificial and real data.

Yoshito Hirata

Institute of Industrial Science
The University of Tokyo
yoshito@sat.t.u-tokyo.ac.jp

Fumiaki Iida

Graduate School of Engineering,
The University of Tokyo
fiida@nanolab.t.u-tokyo.ac.jp

Kiyoshi Kotani

Graduate School of Frontier Science,
The University of Tokyo
kotani@k.u-tokyo.ac.jp

Kevin Judd

Department of Mathematics and Statistics
University of Western Australia
kevin@maths.uwa.edu.au

Kiyoshi Takamasu

Graduate School of Engineering,
The University of Tokyo
takamasu@pe.t.u-tokyo.ac.jp

Kazuyuki Aihara

JST/University of Tokyo, Japan
Dept of Mathematical Sciences
aihara@sat.t.u-tokyo.ac.jp