

# Hirata LAB.

## [Revealing hidden patterns within time series data]

Collaborative Research Center for Innovative Mathematical Modelling

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### Nonlinear Time Series Analysis

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## Nonlinear Time Series Analysis and Its Cross-disciplinary Applications

This laboratory develops methods for nonlinear time series analysis and applies the methods to real datasets of important problems including datasets obtained from brains, weather, economies, and cancers. Our current main focuses include (i) developing methods for analyzing point process data, where events are observed at irregular times, and (ii) personalizing treatments of cancers, which hopefully improves the quality of life.

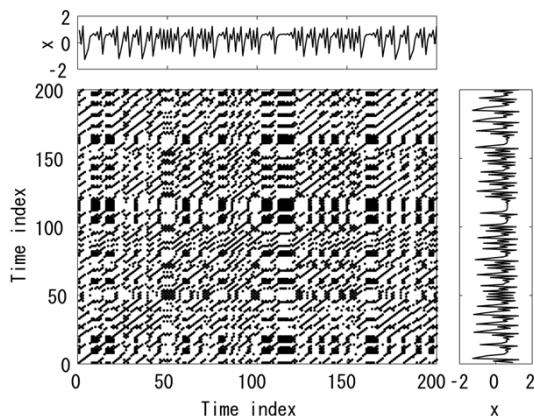


Fig. 1 Recurrence plots for the Henon map.

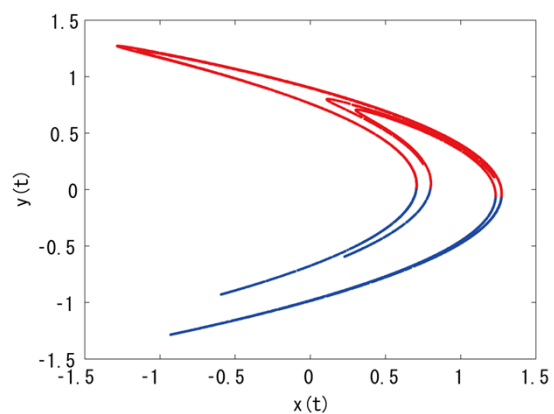


Fig. 2 Generating partition for the Henon map.

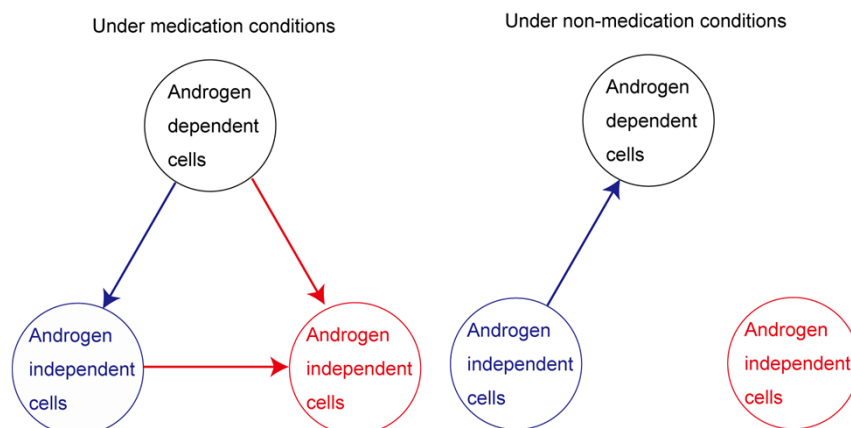


Fig. 3 Schematic diagram for a mathematical model of prostate cancer under intermittent androgen suppression.