

A study on controller structure of biochemical reaction networks

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Many mathematical models of intracellular signal transduction systems have been developed toward model-based analysis [1]. However, since the models are typically complex and nonlinear, it is still a difficult task to analyze them [2]. In this poster, we address a fundamental study on what characteristics the biochemical reaction networks have if the system is considered to be a controller.

- [1] Nakakuki, T., *et al.*, Ligand-specific c-Fos expression emerges from the spatiotemporal control of ErbB network dynamics, 141, 5, 884-896, *CELL*, 2010.
- [2] Nakakuki, T. *et al.*, Methods for the Analysis of Intracellular Signal Transduction Systems (In J. Wu, Ed., Biomedical Engineering and Cognitive Neuroscience for Healthcare: Interdisciplinary Applications), Medical Information Science Reference (an imprint of IGI Global), 2012.