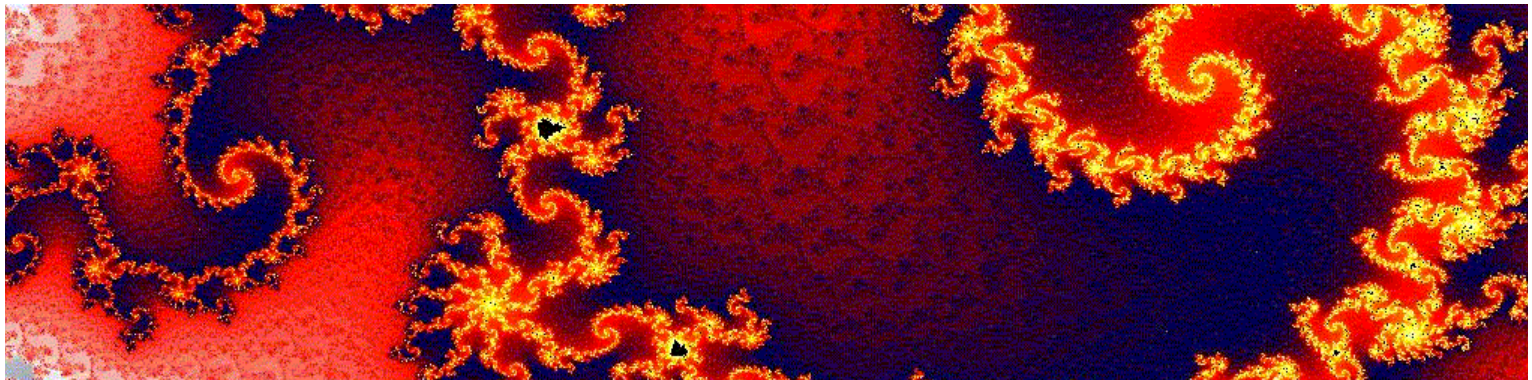


COMPLEX SYSTEMS: SCIENCE AT THE EDGE OF CHAOS

Collected papers of the Spring 2003 postgraduate seminar

Heikki Hyötyniemi (ed.)



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Abstract: Complexity theory studies systems that are too complex to be attacked applying traditional methods. The search for new tools is boosted by intuition: There seem to exist strange similarities among different kinds of complex systems, and finding a general modeling framework for all of them would be a major breakthrough. However, today's complexity research consists of a variety of approaches and methodologies that seem to be mutually incompatible; it seems that the whole field is in a huge turmoil. This report tries to give a coherent view to the field from different points of view: The role of a historical perspective is emphasized when trying to understand the methodological developments.

Keywords: Chaos theory, complexity; agents, networks, cellular automata; fractals, power law distributions; hierarchies, decentralization; emergence.

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ISBN 951-22-7507-4

ISSN 0356-0872

Picaset Oy

Helsinki 2005

HELSINKI UNIVERSITY OF TECHNOLOGY CONTROL ENGINEERING LABORATORY

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ISBN 951-22-7507-4

ISSN 0356-0872

Picaset Oy, Helsinki 2005