

4th International Conference on Self-organization and Adaptation of Computing and Communications (SACC 2008)

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<http://siwn.org.uk/2008/SACC08.htm>

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Recently, it has widely been recognized that self-organization and self-management/regulation offer the most promising approach to addressing such challenges. The current knowledge about large-scale complex IT systems is still very limited, and a framework has yet to be established for their self-organization and adaptation. Topics of particular interest include (but not limited to) the followings.

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(1) Basic Principles and Methodologies for Self-Organization and Adaptation

- General
- Emergence and interactions
- Biologically inspired
- Control theory
- Complex adaptive systems

(2) Self-Organization and Emergence

- adaptation in social insects
- analysis of coupled feedback loops for self-managing systems
- analytic models of emergent behaviors
- architectures of emergent systems
- architectures of self-organizing systems
- artificial immune systems
- artificial life
- autonomy based interactions
- behaviors of emergence
- behaviors of self-organization
- bio-inspired machine learning
- biologically inspired computing
- biologically inspired interaction mechanisms
- cellular automata approaches to emergence
- characterization frameworks of self-organizing software
- cognitive modeling
- complex adaptive systems
- complex non-linear systems
- computational pheromones, potential field, economy
- contextual and/or environmental awareness in emergent systems
- controllability of emergence
- cybernetic principles and self-organization
- dynamic policy development
- emergence and interactions
- emergence in layered systems
- emergence in socio-economic/technical systems
- emergent properties of large complex systems
- entropy approaches to self-organization and adaptation
- evolutionary computation
- evolving emergent systems
- feedback control of chaos in complex systems
- feedback control of uncertainties in large complex systems

- feedback loops in self-managing systems
- game theory, decision theory for self-organization and adaptation
- hierarchical self-organization and adaptation
- holonic architectures for self-organization
- holonic systems for self-organization and adaptation
- interaction mechanisms for self-organization, adaptation and emergence
- managing interactions to achieve self-* outcomes
- methodologies for engineering self-organization
- models of emergent behaviors
- models of social insects
- open complex systems
- role of cognitions (self-awareness)
- self-learning systems
- self-organization and adaptation principles and methodologies borrowed from systems theory, control theory, game theory, decision theory, etc.
- self-organization in biological systems
- self-organization in socio-economic/technical systems
- self-organizing software
- self-organizing systems
- stability of emergent systems
- stigmergy
- swarming and swarm intelligence
- testing and verification of emergent systems

(3) Self-Organization/Adaptation of Multi-Agent Systems

- Foundations
- Self-organization and adaptation
- Learning

(4) Autonomic Computing in General

- Principles and methodologies
- Systems and implementations

(5) Self-Organization and Self-Management in Distributed and Grid Computing

- Grid computing and resource management
- Grid Service Management

(6) Self-Organization and Self-Management in Communications

Submission Deadline

15 April 2008

Conference website

<http://siwn.org.uk/2008/SSCC.htm>