

---

Call for Papers

Fifth International Workshop on Self-Organizing Systems (IWSOS 2011)

KIT, Karlsruhe, Germany, February 2011

<http://iwsos2011.tm.kit.edu>

---

IWSOS 2011 is the fifth workshop in a series of multidisciplinary events dedicated to self-organization in networks and networked systems.

The concept of self-organization is becoming increasingly popular in various branches of technology. A self-organizing system may be characterized by global, coordinated activity arising spontaneously from local interactions between the system's components. This activity is distributed over all components, without a central controller supervising or directing the behavior. Self-organization relates the behavior of the individual components (the microscopic level) to the resulting structure and functionality of the overall system (the macroscopic level). Simple interactions at the microscopic level may give rise to complex, adaptive, and robust behavior at the macroscopic level.

The necessity of self-organization in networks and networked systems is caused by the growing scale, complexity, and dynamics of future networked systems. This is because traditional methods tend to be reductionistic, i.e., they neglect the effect of interactions between components. However, in complex networked systems, interactions cannot be ignored, since they are relevant for the future state of the system. In this sense, self-organization becomes a useful approach for dealing with the complexity inherent in networked systems.

The workshop addresses self-organization different types of technological networks, for example, but not limited to:

- \* Communication and computer networks
- \* Transportation networks
- \* Energy networks
- \* Robot networks

Research from related fields is also welcome. Building on the success of its predecessors, this workshop aims at bringing together leading international researchers to create a visionary forum for discussing the future of self-organization in networked systems.

**\*\*Key Topics\*\***

- \* Design and analysis of self-organizing and self-managing systems
- \* Techniques and tools for modeling self-organizing systems
- \* Robustness and adaptation in self-organizing systems, including self-protection, diagnosis, and healing
- \* Self-configuration and self-optimization
- \* Self-organizing group and pattern formation
- \* Self-organizing synchronization
- \* Self-organizing resource allocation
- \* Self-organizing mechanisms for task allocation and coordination
- \* Self-organizing information dissemination and content search
- \* Security and safety in self-organizing networked systems
- \* Structure and dynamics of self-organizing networks
- \* Risks and limits of self-organization
- \* The human in the loop of self-organizing networks
- \* User and operator-related aspects of human-made self-organizing systems
- \* Applications of self-organizing networks and networked systems
- \* Peer-to-peer networks, vehicular networks, zeroconfiguration protocols
- \* Autonomous traffic lights, self-organized cruise control
- \* Decentralized power management in the smart grid
- \* Collaborative unmanned ground or aerial vehicles, mobile sensor networks

**\*\*Important Dates\*\***

- \* Extended submission deadline: October 04, 2010
- \* Notification: November 17, 2010
- \* Camera-ready papers due: December 01, 2010

\* Conference: February 2011

**\*\*Chairs\*\***

General chairs:

- \* Martina Zitterbart, KIT, Germany
- \* Hermann de Meer, University of Passau, Germany

Program chairs:

- \* Christian Bettstetter, University of Klagenfurt and Lakeside Labs, Austria
- \* Carlos Gershenson, Universidad Nacional Autónoma de México

Keynote Speaker:

- \* Hermann Haken, professor emeritus, University of Stuttgart and founder of synergetics
- \* Hod Lipson, associate professor at the Cornell Computational Synthesis Lab

**\*\*Papers\*\***

IWSOS invites submission of manuscripts that present original research results or research ideas, and that have not been previously published or are currently under review by another conference or journal. Any previous or simultaneous publication of related material should be explicitly noted in the submission. All papers must be submitted in PDF format. Submissions will be peer reviewed by at least three members of the international program committee and judged on originality, significance, interest, clarity, relevance, and correctness.

The Springer "LNCS Proceedings" style should be used for submission. Templates are for LaTeX and Word available at <http://tiny.cc/qiohy>. Click <http://iwsos2011.tm.kit.edu> for detailed information for authors.

\* Full Papers. Full papers should describe original research results. Submissions should be full-length papers up to 12 pages using the LNCS style (including figures, references, and a short abstract).

\* Challenge Papers. Submissions should be position papers, challenging papers, and papers presenting first results. The papers must be up to 6 pages length (LNCS style, including all figures and references), and must include a short abstract.

Both paper types should be submitted via the EDAS system at: <http://edas.info/newPaper.php?c=9217>

When submitting your paper, please consider to allow your paper to be reviewed by a Shadow TPC. A Shadow TPC will allow young researchers and PhD students to learn how to work in a normal TPC, but it has absolutely no influence on the actual TPC's review process and paper selection. Besides helping to educate young researchers, you will get additional review comments regarding your work. For more information, please refer to <http://iwsos2011.tm.kit.edu/>.

**\*\*Proceedings\*\***

The proceedings will be published by Springer-Verlag in their Lecture Notes in Computer Science (LNCS) series. At least one of the authors of each accepted paper must attend IWSOS to present the paper.