

Special Session *on* Evolutionary Computation in Space and Air

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Session Organisers

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Important Dates

Paper Submission:
01 November 2008

Decision Notification:
16 January 2009

Camera-Ready Submission:
16 February 2009

Scope and Motivations

In the Aerospace Sciences, many applications require the solution of global single and multi-objective optimization problems, or problems with mixed variables and non-differentiable quantities. From global trajectory optimization to multidisciplinary aircraft and spacecraft design, from planning and scheduling for autonomous vehicles to the synthesis of robust controllers for airplanes or satellites, evolutionary based techniques have become an important tool for tackling these kinds of problems providing interesting solutions. Not only has this given the way to the application of evolutionary computation but has led also to the development of new approaches.

In most of the cases basic evolutionary heuristics have been hybridized with other techniques, such as gradient methods or branch and prune methods, or modified to better adapt to the specific application under investigation. This has led to the creation of new heuristics, new meta-heuristics or new hybridizations that have proven to be very effective.

Session Topics

This special session intends to collect many, diverse efforts made in the application of evolutionary computation techniques, or related methods, to aerospace problems. The session seeks to bring together researchers from around the globe for a stimulating discussion on recent advances in evolutionary methods for the solution of space and aerospace problems. In particular evolutionary methods specifically devised, adapted or tailored to address problems in space and aerospace applications or evolutionary methods that were demonstrated to be particularly effective at solving aerospace related problems are welcome.

Authors are invited to submit papers on one or more of the following topics:

- ▶ Global trajectory optimization
- ▶ Multidisciplinary design of aerospace systems
- ▶ Formation and constellation control and design
- ▶ Optimal and robust control of air and space vehicles
- ▶ Planning and scheduling for autonomous systems in space and air
- ▶ Multiobjective optimization for aerospace applications
- ▶ Resource allocation and programmatics
- ▶ Evolutionary computation for Concurrent Engineering
- ▶ Distributed global optimization
- ▶ Mission planning and control
- ▶ Robust Mission Design under uncertainties

Submission Guidelines

Manuscripts should be prepared according to the standard format of regular papers specified in IEEE CEC 2009. Paper submission is online through the CEC 2009 submission website www.cec-2009.org. Papers submitted for these session will be peer-reviewed with the same criteria used for other contributed papers. All accepted papers in the special sessions will be included in the published conference proceedings.

Post Conference Publication

Selected high-quality papers will be recommended for publication in the *International Journal of Intelligent Computing and Cybernetics (IJICC)* after extension.



