



**Special Session on**  
**Memetic Algorithms for Hard to Solve Problems**  
**2009 IEEE Congress on Evolutionary Computation**  
**May 18 - 21, 2009, Trondheim, Norway**

**Special Session Organizers**

**Ferrante Neri**  
University of Jyväskylä,  
Finland  
[nferran@cc.jyu.fi](mailto:nferran@cc.jyu.fi)

**Pablo Moscato**  
University of Newcastle,  
Australia  
[Pablo.Moscato@newcastle.edu.au](mailto:Pablo.Moscato@newcastle.edu.au)

**Hisao Ishibuchi**  
Osaka Prefecture  
University, Japan  
[hisaoi@ie.osakafu-u.ac.jp](mailto:hisaoi@ie.osakafu-u.ac.jp)

**Scientific Program  
Committee**

**to be posted**

**Motivation**

One of the recent growing areas in Evolutionary Algorithm (EAs) research is Memetic Algorithms (MAs). MAs are population-based meta-heuristic search methods inspired by Darwinian principles of natural evolution and Dawkins notion of a meme defined as a unit of cultural evolution that is capable of local refinements. Recent studies on MAs have revealed their successes on a wide variety of real world problems. Particularly, they not only converge to high quality solutions, but also search more efficiently than their conventional counterparts. In diverse contexts, MAs are also commonly known as hybrid EAs, Baldwinian EAs, Lamarckian EAs, cultural algorithms and genetic local search.

**Topics**

The aim of this special session is to reflect the most recent advances in the field, and propose novel algorithmic implementations of MAs oriented towards specific problem which are hard to solve by classical optimization methods and popular meta-heuristics. A high emphasis will be given to the problems of balancing global and local search and on the techniques for obtaining an efficient coordination of the local search within an evolutionary framework. Both theoretical and empirical works are in the scope of this session. Some examples of the aforementioned hard to solve problems by means of Memetic Computing are:

- dynamic optimization problems
- noisy fitness landscapes
- computationally expensive optimization problems
- large scale problems
- multi-objective problems
- real-world applications

**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 <http://www.cec-2009.org/index.shtml> . Special session papers will be treated in the same way as regular papers and included in the conference proceedings.

**Post-conference publication**

Some of the most interesting papers of this special session will be invited, in an extended version, for a submission to **Memetic Computing Journal**, Springer, thematic issue on '**Memetic Computing in the Presence of Uncertainties**'.

**Important Dates**

Paper Submission: **November 1, 2008**  
Decision Notification: **January 16, 2009**  
Camera-Ready Submission: **February 16, 2009**