



Call for Papers

Evolutionary Computation in Dynamic and Uncertain Environments (ECiDUE'05)

Special Session Organizers

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Important Dates

Submission Deadline:

April 11, 2005

Author Notification:

May 19, 2005

Camera-ready Papers:

June 11, 2005

CEC2005 Website

<http://www.cec2005.org>

A Special Session for the [2005 Congress on Evolutionary Computation](#)
September 2-5, 2005, Edinburgh, United Kingdom
Sponsored by the IEEE Computational Intelligence Society (CIS), IEE,
and Evolutionary Programming Society

Submission Deadline: April 11, 2005

Many real-world optimization problems are subjected to dynamic and uncertain environments that are often impossible to avoid in practice. For instance, the fitness function is uncertain or noisy as a result of simulation/measurement errors or approximation errors (in the case where surrogates are used in place of the computationally expensive high fidelity fitness function). In addition, the design variables or environmental conditions may also perturb or change over time. For these dynamic and uncertain optimization problems, the objective of the evolutionary algorithm is no longer to simply locate the global optimum solution, but to continuously track the optimum in dynamic environments, or to find a robust solution that operates optimally in the presence of uncertainties. This poses serious challenges to conventional evolutionary algorithms. Handling dynamic and uncertain optimization problems in evolutionary computation has received an increasing research interests over the recent years. A variety of methods have been reported across a broad range of application backgrounds. This special session aims at bringing researchers from academia and industry together to review the latest advances and explore future directions in this field. Topics of interest include but are not limited to:

- Benchmark problems and performance measures
- Tracking moving optima
- Dynamic multi-objective optimization
- Adaptation, learning, and anticipation
- Handling noisy fitness functions
- Using fitness approximations
- Searching for robust optimal solutions
- Comparative studies
- Hybrid approaches
- Theoretical analysis
- Real-world applications

Paper Submission: Manuscripts should be prepared according to the standard format of regular papers specified in CEC2005 and be restricted to a maximum of 8 pages. Instructions for preparing the paper are provided at <http://www.cec2005.org>. Paper submission is strictly only in PDF format and through the regular CEC2005 submission website. Special session papers will be treated in the same way as regular papers and included in the conference proceedings. Papers accepted will be judged as to whether an extended version would be suitable for a [Genetic Programming and Evolvable Machines special issue on "EC in Dynamic and Uncertain Environments"](#). All authors of papers deemed appropriate are encouraged to submit an extended version to the journal, and will undergo a fast track reviewing process.