

EVOLUTIONARY ALGORITHMS AND METAHEURISTICS IN CIVIL ENGINEERING AND CONSTRUCTION MANAGEMENT

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Key words: Evolutionary Algorithms, Genetic Algorithms, Metaheuristics, Computational Methods, Civil Engineering, Construction Management, Optimum Design, Robust Design.

ABSTRACT

The main objective of this symposium is to bring together researchers and to generate interest in presenting papers on new approaches, in the field of evolutionary algorithms and metaheuristics in civil engineering and construction management.

The communications must address evolutionary algorithms and metaheuristics applied in solving optimum design problems in civil engineering [1], construction management [2] and related topics.

Evolutionary algorithms are an interdisciplinary research area comprising several paradigms inspired by the Darwinian principle of evolution. The current stage of research considers, among others, the following paradigms: Genetic Algorithms, Genetic Programming, Evolutionary Programming, Evolution Strategies and Differential Evolution, in addition to other metaheuristic paradigms such as Particle Swarm Optimization or Ant Colony Optimization.

Applications of these optimization methods in civil engineering and construction management are welcomed, both for single-objective and multi-objective optimization problems [3].

Topics to be covered (but are not limited to) are:

- In the civil engineering area contents related to structural design (e.g.: concrete and/or steel structures, etc.) [4], geotechnics, hydraulics, and infrastructure are welcome.
- In the construction management area related content can be project management, planning, coordination and control of projects, cost and time management, among others.
- Development aspects such as including surrogate modeling, parallelization, performance comparisons among methods, etc., are encouraged.

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