



Optimization, Metaheuristics and Evolutionary Algorithms in Computational and Civil Engineering

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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 optimization, metaheuristics and evolutionary algorithms in computational and civil engineering. The communications must address metaheuristics, evolutionary algorithms and other optimization techniques, applied in solving optimum design problems in computational and civil engineering and related topics [1, 3, 4]. 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, Evolution Strategies, Differential Evolution, etc. in addition to other metaheuristic paradigms such as Particle Swarm Optimization.

Applications of these optimization methods and others, in computational and civil engineering are welcomed, both for single-objective and multi-objective optimization problems [2]. 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.), geotechnics, acoustics, hydraulics, and infrastructure are welcomed. In the computational engineering area, related contents are mechanical and aeronautical engineering, renewable energies and reliability, among others. Development aspects such as including surrogate modelling, parallelization, hybridization, performance comparisons among methods, etc., are encouraged.

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