Special Issue

Unconventional Methods for Particle Swarm Optimization

Message from the Guest Editor

Particle swarm optimization (PSO) is a population-based optimization metaheuristic inspired by the collective dynamics of groups of animals, like insects, birds, and fishes. Recent research trends have indicated the potentiality of the approach and its large possibilities of improvement. With the term "unconventional methods for PSO", here, we mean modifications of the standard PSO, with the objective of improving its performance, or bestowing on it some particular properties. For instance, new methods for choosing the inertia weight, constriction factor, cognition and social weights; parallelizing PSO in several different ways; defining hybrid algorithms in which PSO is integrated with other types of metaheuristic optimization methods; entropy-based PSO; etc. The study of unconventional methods for PSO is a very lively and active research field, and the objective of this Special Issue is to collect contributions in this recent and exciting area, with particular focus on entropic, information-theoretic, or probability theoretic techniques.

Guest Editor

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The concept of entropy is traditionally a quantity in physics that has to do with temperature. However, it is now clear that entropy is deeply related to information theory and the process of inference. As such, entropic techniques have found broad application in the sciences.

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Editor-in-Chief

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