IEEE CEC 2019 Special Session on
Self-Organizing Migrating Algorithm:
Foundations, Perspectives and Challenges

SOMA@CEC 2019
This special session is organized under the annual IEEE World Congress on Evolutionary Computation (IEEE CEC), which is one of the largest technical events in the field of Computational Intelligence.
This special session is concerned about the Self-Organizing Migrating Algorithm (SOMA), published since 2001 in journals as well as books (see somaalgorithm.com for details) and belonging to the class of swarm intelligence techniques. Compare to other prominent swarm intelligence paradigms, as for example Particle Swarm Optimization (PSO), Ant Colony Optimization (ACO), Firefly, and so on, SOMA is distinguished by competitive-cooperative phases, inherent self-adaptation of movement over the search space, as well as by discrete perturbation mimicking the mutation process known from the classical evolutionary computing techniques. The SOMA performs significantly well in both continuous as well as discrete domains. The SOMA has been used successfully on various tasks as the real-time plasma reactor control, aircraft wings optimization, chaos control, large scale, combinatorial and permutative optimization tasks.
This special session is concern about original research papers discussing new results on and with SOMA, as well as its novel improvements tested on widely accepted benchmark tests.

Scope and Topics:
The proposed special session aims to bring together latest research on various applications, development and hybridization of SOMA. It will facilitate knowledge exchange, technical discussions, and networking on topics of interest that include, but are not limited to:

- The theoretical aspect of the SOMA
- SOMA hybridisation with other metaheuristics
- The performance improvement, testing and efficiency of the SOMA
- SOMA for complex optimization scenarios:
  - constrained optimization
  - multiobjective optimization
  - manyobjective optimization
  - multimodal optimization and niching
  - expensive and surrogate assisted optimization
  - dynamic and uncertain optimization
  - large scale optimization
- SOMA and its parallelisation
- SOMA for discrete optimisation
- Randomness, chaos and its impact on the SOMA dynamics and algorithm performance.
- SOMA in real-world applications
- And more…

Publication
All accepted papers will be published as IEEE conference proceedings and will be included in the IEEE Xplore database.
In the CEC online submission system please use: Self-Organizing Migrating Algorithm: Foundations, Perspectives and Challenges, as the main research topic

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Paper submission: January, 7, 2019
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Camera ready submission: March, 31, 2019
Author registration: March, 31, 2019

Conference website:
http://cec2019.org/
Special session website:
https://zelinkaivan65.wixsite.com/somaalgorithm/cec-2019
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