# Special Issue

# Advances in Nature-Inspired Optimization Algorithms in the Mathematical Field

### Message from the Guest Editors

Nature-inspired optimization algorithms can tackle complex optimization problems by emulating the principles and behaviors found in natural systems. As they can efficiently solve these problems, numerous metaheuristics have been proposed in the last 30 years, such as ant colony optimization, particle swarm optimization, the fireworks algorithm, the bat algorithm, harmony search, etc. These methods have been applied to real-world problems in various fields and represent state-of-the-art methods used to devise solutions. Nowadays, researchers are focusing on explaining and applying the core algorithms' principles, such as exploration and exploitation operators and the balance between these factors, along with the initialization and selection techniques, possible hybridization techniques, and automatic algorithm component selection and automatic algorithm design, rather than prioritizing the source of inspiration.

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