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# Call for Papers

## *Annals of Operations Research*

### **Special Issue: Recent Advances in Simulation-based Optimization for Operations Research Problems**

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This is a call for papers that make a significant contribution to the topic of **Recent Advances in Simulation-based Optimization for Operations Research Problems**. This call is open to all researchers in this area. The deadline for submission is **June 30, 2020**.

#### **Background:**

Simulation modelling is a prevailing technique to analyze complex systems when closed-form analytical models provide poor estimations or do not exist at all because of the modelling assumptions and system complexities. Simulation models enable decision-makers to set-up “what if” questions about the effects of alternative pre-specified decisions on the system performance, but they are not equipped with search techniques to find and suggest optimal decision(s). Thus, simulation models are combined with optimization algorithms (e.g., metaheuristics and/or exact methods) to find optimal or near-optimal decisions for complex problems. Such a coupling is known as “simulation-based optimization” or “simulation-optimization” in decision-making framework.

With recent increases in the computational power of computers, there have been growing usage and applications of simulation-optimization methodology in operations research, including defense applications, environmental systems, communication networks, supply chains, and healthcare systems application domains. The goal of this special issue is to provide recent developments in simulation-based optimization, theoretically as well as in real-world applications.

#### **Main topics of interests are:**

- Real-world case studies
- Usage of hybrid simulation techniques (agent-based and discrete event, system dynamics and agent-based models, etc.) in simulation-based optimization
- Integration of machine learning with simulation-based optimization
- Embedding artificial intelligence techniques into simulation-based optimization
- Surveys exploring the recent advances and trends in simulation-based optimization
- Multi/many-objective simulation-based optimization
- Usage of state-of-art heuristics/metaheuristics in simulation-based optimization
- Robust optimization with simulation-based optimization

We encourage, in particular, participants of the **23rd International Congress on Modelling and Simulation (MODSIM2019)** held in Canberra, Australia, December 1–6, 2019, to submit extended versions of their presented papers. Contributions arising from papers given at a conference **should be substantially extended** and should **cite the conference paper where appropriate**.

**Instructions for Authors can be found at:**

<https://www.springer.com/journal/10479/submission-guidelines>

Authors should submit a cover letter and a manuscript by June 30, 2020, via the Journal's online submission site. Manuscripts submitted after the deadline may not be considered for the special issue and may be transferred, if accepted, to a regular issue.

Please see the Author instructions on the web site if you have not yet submitted a paper through Springer's web-based system, Editorial Manager. When prompted, please select the special issue's title, **Recent Advances in Simulation-based Optimization for Operations Research Problems**, to ensure that it will be reviewed for this special issue.

Papers will be subject to a strict review process under the supervision of the Guest Editors, and accepted papers will be published online individually, before print publication. **Guest Editors:**

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