

Special Issue on
Large-Scale and Computing Intensive Optimization

CALL FOR PAPERS

The application of optimization theory has made great progress in a wide range of science and engineering fields including physics, chemistry, economics, mechanics, electricity, aerospace, and biology. Many optimization approaches have been developed to deal with various optimization models or problems. In recent years, the optimization problems that emerged from industrial processes became more and more complex, especially for the cases of dynamic system. The high number of decision variables and path constraints makes it a challenge to solve the large-scale optimization problem effectively. The calculation of objective function and constraints is time-consuming for computing. The gradients with respect to objective function and constraints are also time-consuming for computing and sometimes are too complicated to derive (e.g., the state path constraints in optimal control problem). In this special issue, we invite researchers and authors to submit original research and review papers on new optimization models or methods to solve the large-scale optimization problem.

In addition, the application papers related to the above large-scale optimization methods in interdisciplinary fields such as chemical engineering, oil exploitation, mechanical processing, and track traffic are also welcomed.

Potential topics include but are not limited to the following:

- ▶ Convergent speed improvement for intelligent optimization methods such as genetic algorithm, swarm optimization, and differential evolution
- ▶ Effective methods for dealing with a large number for constraints or path constraints
- ▶ Gradient calculation or automatic differentiation for large-scale or dynamic optimization
- ▶ New approximation and modeling method for large-scale optimization problem, such as iterative dynamic programming and approximation dynamic programming

Authors can submit their manuscripts through the Manuscript Tracking System at <https://mts.hindawi.com/submit/journals/jopti/lcio/>.

Papers are published upon acceptance, regardless of the Special Issue publication date.

Lead Guest Editor

Shu-rong Li, Beijing University of Posts and Telecommunications, Beijing, China
lishurong@bupt.edu.cn

Guest Editors

Quan-min Zhu, University of the West of England, Bristol, UK
quan.zhu@uwe.ac.uk

Johan Dubbeldam, Delft University of Technology, Mekelweg, Netherlands
j.l.a.dubbeldam@ewi.tudelft.nl

Luis A. Aguirre, Universidade Federal de Minas Gerais (UFMG), Belo Horizonte, Brazil
aguirre@cpdee.ufmg.br

Jin-Zhao Wu, Guangxi University, Nanning, China
wujz2009@gmail.com

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