

## Special Issue on

# Fair Optimization and Networks: Models, Algorithms, and Applications

## Call for Papers

The optimization models related to the design or evaluation of system policies are mainly focused on some efficiency metrics. However, in systems which serve many users there is a need to respect some fairness rules while looking for the overall efficiency. In order to ensure fairness in a system, all system entities have to be adequately provided with the system's services. The fair optimization with the preference structure that complies with both the efficiency and the equitability may be used to generate a variety of fair and efficient solutions. The so-called lexicographic maximin (or minimax) optimization concept (and its closely related Max-Min Fairness optimization concept) extends max-min optimization models, and is widely applied to various systems. A lexicographic maximin objective optimizes the worst performance among all system entities, followed by optimizing the second worst performance without degrading the worst one, and so forth. However, this may cause a dramatic worsening of the overall system efficiency. Therefore, several other fair optimization models have been analyzed extensively.

The issue of fairness is widely recognized in location and allocation analysis of public services. The need of fair optimization arrives also in more general problems of resource allocation such as in various network systems. Fair network optimization issues are in focus of diverse applications and problems arising in communication networks. These issues are closely related to situations where it is desirable to achieve an equitable allocation of certain resources, shared by competing demands. Fairness, more specifically, lexicographic maximin optimization, Max-Min Fairness and Proportional Fairness, are widely studied in the communication network literature, especially related to bandwidth allocation, and rate adaptation and congestion control in TCP networks. Still, this concept continues to be widely applicable in different settings in network optimization and more specifically in multi-commodity flow networks related applications.

The special issue strives to serve as a platform for researchers and practitioners to present advances in the field. We invite authors to submit original research articles that propose new models, algorithms and applications of fair network optimization. Potential topics of interest include, but are not limited to:

- Fairness in communication network design including traffic routing, resource allocation, and survivability issues
- Fair optimization of transportation networks
- Network dimensioning, models, and methods
- Fair optimization of logistic networks
- Fairness in sensor networks
- Fair allocation of resources, tasks, or costs
- Fair scheduling

Before submission authors should carefully read over the journal's Author Guidelines, which are located at <http://www.hindawi.com/journals/jam/guidelines/>. Prospective authors should submit an electronic copy of their complete manuscript through the journal Manuscript Tracking System at <http://mts.hindawi.com/submit/journals/jam/opnet/> according to the following timetable:

Manuscript Due	Friday, 7 February 2014
First Round of Reviews	Friday, 2 May 2014
Publication Date	Friday, 27 June 2014

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