Mixed-Integer Linear and Nonlinear Programming Methods for Energy Aware Traffic Control in Stationary Networks and Clouds

Message from the Guest Editor

Methods of increasing the energy efficiency of computer networks and clouds are becoming an important issue in telecommunication networks. As observed, significant savings can be obtained by consolidating flows during periods and in areas of reduced traffic. The idea is to temporarily shut down or put to sleep certain parts of a network or a cloud and to meet the demands of users through the rest of the system. The most effective solutions are network-wide and based on online optimization. Unfortunately, realistic, single-path models involve a big number of binary routing variables and lead to NP-hard problems that cannot be solved in an acceptable time. This is the reason behind the big amount of interest in the development of numerical algorithms which will enable getting an approximate solution to these problems in a possibly short time.

Guest Editor

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Deadline for manuscript submissions

closed (31 March 2023)

Energies

an Open Access Journal
by MDPI

Impact Factor 3.2
CiteScore 7.3

mdpi.com/journal/
energies

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