

DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE
UNIVERSITY OF SOUTHERN DENMARK, ODENSE

COMPUTER SCIENCE COLLOQUIUM

Facility Location Games with Fair Cost Allocation

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IMADA's Seminar Room

Abstract:

We study Facility Location games played by n autonomous agents situated on the nodes of a network. Each agent orders installation of a facility at a node of the network and pays connection cost to the chosen node, and shares facility installation cost fairly with other agents having chosen the same location. This game has pure strategy Nash equilibria, that can be found by simple improvements performed by the agents iteratively. This game is a special case of recently studied network design games with fair cost allocation (also known as Shapley cost allocation). We describe briefly these games and the questions that arise in the context of their study. Subsequently we give an overview of our recent results on Facility Location games, with respect to the overall cost of pure Nash equilibria, the complexity of the iterative improvements procedure, and polynomial-time approximation of pure equilibria. Furthermore we also study the overall cost of (approximate) strong equilibria, that generalize pure equilibria by being resilient to coalitional pure deviations.

This is a joint work with Thomas Dueholm Hansen

Host: Jørgen Bang-Jensen