



Intelligent and Autonomous Systems Group
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Market-Based Supply-Demand Matching Mechanisms

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Market-Based Supply-Demand Matching Mechanisms

Example: Congestion management

Congestion Management & Fairness

Two types of models:

- ▶ Models based on obtaining flexibility
- ▶ Quota based models
 - ▶ Voluntary quota model
 - ▶ Secondary market quota model

Quota Allocation Algorithm:

- ▶ Tree-shaped network with both consumption and production
 - ▶ Solves congestion, is pareto efficient, and is constrained envy-free

Future Work

- ▶ How can market mechanisms and fairness-based congestion management be combined?
- ▶ How can fairness-based grid congestion solutions be implemented as distributed algorithms?
- ▶ What is the 'price of fairness'?