

Dynamic equilibrium model for spatial auction markets

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Abstract

Spatial equilibrium models are utilized for description of behavior and for management of complex systems containing many interacting elements, with taking into account their spatial distribution. We consider such a system of auction markets joined by transmission lines subject to joint balance and capacity flows constraints for a certain time period propose a primal-dual system of variational inequalities whose solutions yield an equilibrium trajectory of this system. A splitting type method is proposed to find a solution.

Keywords

Equilibrium trajectory, Spatial equilibrium model, System of auction markets, Variational inequality problem