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Systemic Risk and Network Intervention

Prof. Giacomo Como introduces the seminar.

Abstract

We consider a novel adversarial shock/protection problem for a class of network equilibria models emerging from a variety of different fields as continuous network games, production networks, opinion dynamic models. The problem is casted into a min-max problem and analytically solved for two particular cases of aggregate performances: the mean square of the equilibrium or of its arithmetic mean. The main result is on the shape of the solutions, typically exhibiting a waterfilling type structure with the optimal protection concentrated in a proper subset of the nodes, depending significantly on the aggregate performance considered. The relation of the optimal protection with the Bonacich centrality is also considered.

Biography

Luca Damonte obtained his Master Degree in 2018 in Mathematical engineering at Politecnico di Torino. He is currently a PhD student at Politecnico di Torino under the supervision of Fabio Fagnani and Giacomo Como. His research is on networked system and network intervention.