CMM
Center for Mathematical Modeling

SIPo (Seminario de Investigadores Postdoctorales)

Speaker: Svenja Griesbach (CMM)

Title: Deterministic Impartial Selection with Weights.

Abstract:

In the impartial selection problem, a subset of agents up to a fixed size k among a group of n is to be chosen based on votes cast by the agents themselves. A selection mechanism is impartial if no agent can influence its own chance of being selected by changing its vote. It is \alpha-optimal if, for every instance, the ratio between the votes received by the selected subset is at least a fraction of \alpha of the votes received by the subset of size k with the highest number of votes.

We study deterministic impartial mechanisms in a more general setting with arbitrarily weighted votes and provide the first approximation guarantee, roughly 1/\lceil 2n/k\rceil. When the number of agents to select is large enough compared to the total number of agents, this yields an improvement on the previously best known approximation ratio of 1/k for the unweighted setting. We further show that our mechanism can be adapted to the impartial assignment problem, in which multiple sets of up to k agents are to be selected, with a loss in the approximation ratio of 1/2.

Date and Time: 5th May, Monday at 2.30 PM
Venue: John Von Neumann Seminar Room, CMM, Beauchef 851, North Tower, 7th Floor