

AGCO Seminar

Speaker: Ulrike Schmidt-Kraepelin, CMM.

Title: Lifting Apportionment Methods to Weighted Fair Division.

Abstract: We study the problem of fairly allocating indivisible items to agents with different entitlements, which captures, for example, the distribution of ministries among political parties in a coalition government. This setting (known as weighted fair division) constitutes a generalization of the well-studied apportionment problem, and we present two approaches for lifting apportionment methods to weighted fair division.

In the first part of the talk, we focus on additive valuations and show that picking sequences derived from divisor methods provide natural envy-freeness, proportionality, and monotonicity properties. However, picking sequences quickly lose their fairness guarantees when moving beyond additive valuations. In the second part of the talk, we introduce welfare measures based on harmonic numbers and show that variants of maximum weighted harmonic welfare offer strong fairness guarantees under matroid-rank valuations. Surprisingly, these guarantees are even stronger than those that are satisfied by the well-known Nash welfare rule.

This talk is based on joint work with Mithun Chakraborty, Luisa Montanari, Nicholas Teh, and Warut Suksompong.

When: April 12, 3:00 pm hrs.

Where: Sala de Seminario John Von Neuman, CMM, Beauchef 851, Torre Norte.