CMM
Center for
Mathematical
Modeling

cmm.uchile.cl

Beauchef 851, Edificio Norte, piso 7
Santiago, CHILE
CP 837 0456

tel +56 2 2978 4870

AGCO Seminar

***Speaker**:* Niklas Rieken, RWTH Aachen, Alemania.

***Title*:** Computing buyer-optimal Walrasian prices in multi-unit matching markets via a sequence of max flow computations.

Abstract: Given a market where discrete indivisible items of different types are sold to a set of buyers. There is a given supply of each type and each buyer has a given (maximum) demand. Each buyer valuates the items linearly in our setting. We aim for competitive prices, i.e. prices such that an allocation exists where every buyer gets one of his preferred bundles. The prices should be as small as possible and as much as possible should be sold.

We show how to compute these buyer-optimal Walrasian prices. We present an ascending auction which iteratively raises the prices on the goods in the left-most min cut in some associated auxiliary flow network. Given this prices, we can compute an allocation where as much as possible is sold. The structural insights obtained from our flow-based approach furthermore lead to several interesting insights regarding the sensitivity analysis of our ascending auction.

Joint work with Katharina Eickhoff, Tom McCormick, Britta Peis, and Laura Vargas Koch.

***When*:** July 06, **15:00 hrs.**

***Where*:** Sala de Seminario John Von Neuman, CMM, Beauchef 851, torre norte.