The Department of Mathematics presents

A Colloquium

Thursday, February 9, 4:00–4:50pm
Bond Hall 227

Speaker: Robert Hildebrand (IBM)
Title: Mixed Integer Formulations of Integer Programs

Abstract: A Mixed Integer Linear Program (MILP) is an optimization problem where you maximize a linear function subject to linear constraints and the constraint that some of the variables must take integer values. Both computationally and theoretically, MILPs requiring only few variables to be integer can be solved efficiently whereas problems with many integer variables can be difficult to solve. We investigate how to reformulate Integer Programs (having all integer variables) as equivalent MILPs in order to give efficient algorithms to solve them. We will discuss two main results: a generalization of total unimodularity, and lower bounds for the extension complexity of the matching polytope in the context of mixed integer extended formulations.

Refreshments provided by the department