

数学与系统科学研究院

计算数学所学术报告

Speaker: Dr. Chris Ryan (University of British Columbia)

Topic: Computing Solution Concepts in Games with Integer Decisions

**Time: 15:30-17:30,
November 16th (Monday)**

Place: Room 311, Lan-Bai Building

Inviter: Prof. Ya-Xiang Yuan

Abstract:

I discuss algorithms and complexity results for two game theoretic extensions of integer programming: integer programming games and bilevel integer programming. In the case of integer programming games, I discuss an algorithm which computes pure Nash equilibria using rational generating functions which runs in polynomial time when certain parameters are fixed. In the case of bilevel integer programming, I describe an algorithm which decides the existence of and computes "optimistic" optimal solutions using parametric integer programming and binary search. I show that this algorithm runs in polynomial time when the number of integer variables are fixed, extending a result by Lenstra on integer programming in fixed dimension to the bilevel setting.

This is joint work with Matthias Koeppel and Maurice Queyranne.

欢迎大家参加！