



Frontiers of Mathematics Lecture

The Salesman and the Postman: Frontiers and Gateways in Combinatorial Optimization

Abstract

Combinatorial optimization has recently witnessed new and also simultaneous applications of probability theory, information theory, algebra, geometry, number theory, semidefinite programming, etc. This lecture aims to showcase some interactions between combinatorics and other branches of mathematics and also beyond the mathematical realm or between some pillars of combinatorics itself.

The presentation plans to explore frontiers and gateways through various examples with the Traveling Salesman Problem (TSP) and the Chinese Postman Problem serving as primary threads. A potential side-effect of these explanations may be to share some concrete recent ideas related to the TSP itself, and to some other combinatorial problems, including some contributions of the lecturer.

The history of the TSP demonstrates how generic methods may predict new phenomena, stimulate the development of adapted specialized solutions, and how a synthesis of several methods finally leads to breakthroughs.

Biography

Professor András Sebő obtained his Ph.D. from Eötvös Loránd University in 1984 and Candidate's Degree from the Hungarian Academy of Sciences in 1989. He worked at the Hungarian Academy of Sciences from 1979 to 1988, and joined the University of Grenoble in 1988, where he advanced to the position of CNRS Director of Research in 1996. He has held visiting positions at various leading institutions, including Research Institute for Discrete Mathematics in Bonn (as John von Neumann Professor), DIMACS, Fields Institute, Hausdorff Center for Mathematics, University of Waterloo, Tokyo University, and Tel Aviv University.

His research interests cover a wide spectrum of combinatorial optimization and discrete mathematics, such as algorithm design, polyhedral combinatorics, graph structures, and multicommodity flows. He has accomplished a series of fundamental results in these research areas.



Professor András Sebő

CNRS, Laboratoire G-SCOP

University of Grenoble

Grenoble, France

Date :

14 October, 2024 (Monday)

Time :

4:30 – 5:30pm

(Tea Reception starts at 4:00 pm)

Venue :

Lecture Theatre C, LG1/F,

Chow Yei Ching Building

The University of Hong Kong