UNIVERSITY OF ALBERTA

Pacific Institute *for the* Mathematical Sciences

PIMS-KANTOROVICH INITIATIVE-UNIVERSITY OF ALBERTA

DISTINGUISHED COLLOQUIUM

ROBERT J. MCCANN

Tuesday, May 30, 2023

3pm MDT

Room 239 Central Academic Building (CAB)

University of Alberta

LOCALLY LIPSCHITZ SELECTION IN THE PRINCIPAL-AGENT PROBLEM

Robert J. McCann
Mathematics Department
University of Toronto

Robert McCann is a professor of mathematics and Canada Research Chair in Mathematics, Economics and Physics at the University of Toronto. He is a world leader in the vibrant field of optimal transportation, and has played a pioneering role in its rapid development since the mid 90's. In particular, the notion of displacement convexity, introduced in his PhD thesis, lies behind many of the area's myriad applications. His distinguished research record has been recognized with many prestigious awards, including (among others) an invited lecture at the 2014 International Congress of Mathematicians, election to the Royal Society of Canada in 2014, the 2017 Jeffery-Williams prize of the Canadian Mathematical Society and the 2023 W.T. and Idalia Reid Prize of the Society for Industrial and Applied Mathematics.

Abstract

We prove the agent's choice will be a locally Lipschitz function of their type in the subclass of principal-agent problems considered by Figalli, Kim, and McCann (2011). Our approach is based on the construction of a suitable comparison potential which allows us to pinch the indirect utility function (whose gradient determines this choice) between parabolas. The original ideas for this proof arose in an earlier, unpublished, result of Caffarelli and Lions for bilinear preferences adapted here to more general quasilinear benefit functions. This represents joint work with Cale Rankin and Kelvin Shuangjian Zhang.

This talk is HYBRID and will be available on Zoom. The Zoom link will be distributed through the KI mailing list (sign up by clicking "SUBSCRIBE" at the top of this webpage:
https://kantorovich.org/