



復旦大學
FUDAN UNIVERSITY

Applied Math
Ph.D. Seminar

The seismic inverse problem and the optimal transport theory

Speaker: Jing Chen (Tsinghua University)

Time: 2021-04-22, 16:10 to 17:00

Location: Rm 1801, Guanghua East Tower

Advisor: Hao Wu (Tsinghua University)

Abstract: The seismic inverse problem is one of the most important problems in geosciences, such as the earthquake location and the seismic tomography. Seismic signals are recorded by stations at the surface to determine the earthquake information and the structure of the earth's interior. From the mathematical point of view, the seismic inverse problem can be formulated as a PDE constrained nonlinear optimization problem. Compared to the traditional L_2 norm which suffers from the cycle skipping problem, the objective function based on the optimal transport metric holds better convexity property and high resistance to the noise. Thus, more accurate and robust inversion results can be obtained by introducing the optimal transport theory to seismic inverse problems.