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Joint Colloquium with IMS

Seismic Imaging and the Optimal Transport

Professor Bjorn Engquist
Department of Mathematics
The University of Texas at Austin

Abstract: Velocity estimation in seismic imaging can be formulated as PDE constrained minimization where the miss-match between measured and computed signals plays an important role. The purpose is to find geophysical properties, which are represented by coefficients in the PDE for seismic wave propagation. We propose using optimal transport theory and the Wasserstein metric for this miss-match. The optimal transport can be given by the gradient of the solution to a Monge–Ampère equation. We will discuss how to normalize the seismic signals so they fit the required conditions of optimal transport Numerical examples comparing different techniques will be presented.

Date: Tuesday, 9 January 2018
Venue: Rm. 222, Lady Shaw Building
         The Chinese University of Hong Kong, Shatin
Time: 3:00 p.m. – 4:00 p.m.

All are Welcome!