

**Title:** Optimising Seismic Imaging via Bilevel Learning

**Abstract:** As part of the seismic imaging process, waves are emitted from a source into the earth and sensors record the resulting signal. An image of the subsurface is created using Full Waveform Inversion (FWI). In this talk, it is shown that, given prior information about the likely make-up of the subsurface (in the form of one or more training models), one can optimise the location of the sensors to retrieve the best possible information about the subsurface. This problem is considered in the framework of bilevel learning, where the upper level is the sensor optimisation problem, and the lower level is the FWI problem.