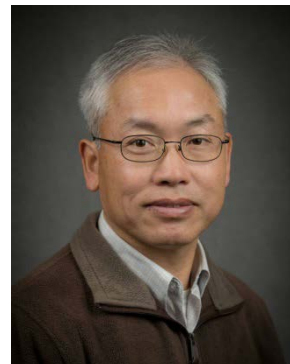


# Short Course: Modeling Seismic Waveforms

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**Dates:** 17-21 June 2019

**Time:** 9:30 a.m. – 12:00 noon

**Venue:** Conference Room, 3/F, Mong Man Wai Building

**Course Description:** One of the core parts is in seismology to compute ground motion caused by earthquakes, which demands knowledge of representation of source (earthquake) and wave propagation. In this short course, modeling seismic waveforms will be introduced, including observations of seismic data, earthquake source representation, and quantification of wave propagation in layered media. The short course is free. Registration is required at the following link

<https://cloud.itsc.cuhk.edu.hk/webform/view.php?id=7491814>

### Lecture Schedule:

1. Introduction (Day 1)
  - Course overview
  - Seismic instrumentation
  - Seismic data processing
2. Seismic Sources (Day 2)
  - Earthquake source representation, seismic moment tensor
  - Displacement produced by a point force in a whole space
3. Multi-layered Media (Day 3)
  - Generalized ray theory
  - Frequency-wavenumber integration method
4. Regional Distance Seismic Waveforms (Day 4)
  - Moment tensor inversion
  - Determine regional velocity structures
5. Upper-mantle Distance Waveforms (Day 4)
  - Velocity discontinuity and triplications
  - Determine upper-mantle structures
6. Teleseismic Waveforms (Day 5)
  - Receiver function method
7. Core phases (Day 5)

