Department of Mathematics

Colloquium

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The 'small' data problem: Using Bayesian Inference to estimate parameters of historical earthquakes from anecdotal evidence

Abstract: Accurate assessment of seismic hazards is a difficult task, particularly because the temporal scale of seismic events is well beyond the extent of existing data. Essentially earthquakes recur over periods of hundreds if not thousands of years, but the only measurably reliable data is available since the onset of the Cold War. This means that seismic hazards are very hard to forecast using instrumental data alone. To improve this forecast we focus on pre-instrumental, historical seismic events and using modern Bayesian techniques and anecdotal historical records, we develop a probability distribution describing the magnitude and location of past seismic events using very limited and unreliable observations of the resultant tsunami. In particular we will focus on two events from eastern and central Indonesia in the early to mid 19th century.

Wednesday February 14, 2024
2:15 – 3:15 PM
Via Zoom:

https://csun.zoom.us/j/87007010708?pwd=V3pxV3FEZTRETGI1YS9PZk1JVnZhQT09

Meeting ID: 870 0701 0708
Passcode: 010987

Faculty Host: Ali Pakzad