

AOB Seminar

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開催日時: 2016年11月8日(火) 10:30-12:00

場 所: 地震・噴火予知研究観測センター A棟3階第二講義室

講演題目&要旨:

The importance of historical seismograms

For assessing seismic hazard of a particular region, it is essential to understand longer term earthquake behavior of the region. To this end, it is important to study historical events in as much detail as possible. Historical seismograms provide basic data for such studies. Many historical seismograms have been kept and archived at many observatories in the world, but many of them have not been studied in detail. In old days it was difficult to analyze waveforms over a broad frequency band in light of quantitative seismic excitation and propagation theories. Now, we have technical capabilities to scan, digitize and interpret them using modern seismological practices. Also we can compare old seismograms with those of recent events that occurred in the same region to facilitate detailed interpretation. In particular after more than 100 years of observations, we are beginning to experience a repeat of large and great earthquakes in the region where a large historical earthquake occurred. Thus, studies of historical earthquakes provide seismologists with unprecedented opportunities to understand the similarity and variability of seismic ruptures on plate boundaries. In this presentation I will illustrate the use of historical seismograms using the 1907 Sumatra earthquake, the 1943 Chile earthquake, and the 1906-1942 Ecuador-Colombia earthquake as examples.

Another important use of historical seismograms is to assess ground-motion hazard in a densely populated modern city where a large earthquake occurred before the city has developed. Using modern seismological methods on available seismograms of the old event we can make more realistic assessment of ground-motion hazard of the region. A case for the 1910 Taiwan earthquake will be presented.