

Earthquake Ruptures on Heterogeneous Faults

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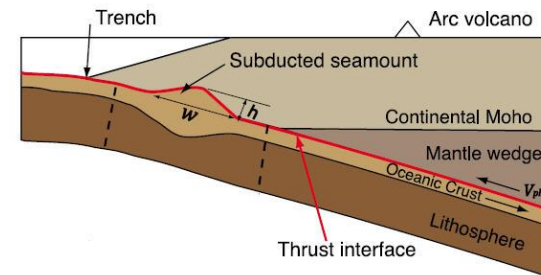
Time: 11:00a.m. – 12:00noon

Venue: Rm. 128, Science Centre North Block

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Abstract Here I investigate the effects of fault heterogeneity on earthquake ruptures through dynamic rupture simulations. First, I investigate rupture scenarios of anticipated megathrust earthquakes along the Cascadia subduction zone. I find that along-strike rupture extents of future earthquakes are dependent on the epicenter locations. The results suggest that quantitative evaluation of interseismic coupling models is necessary for seismic hazard preparation. Second I investigate the effects of geometrical irregularities such as subducted seamounts on earthquake ruptures. I demonstrate that subducted seamounts can act as a barrier to earthquake ruptures. Moreover, I observe that seamount-induced barriers can turn into asperities in seismic cycles. These results suggest that a strong barrier patch may not necessarily reduce the maximum size of earthquakes. Instead, the barrier could experience large coseismic slip when it is ruptured.



~ All are Welcome! ~