

gPhone  
measurements of  
crustal displacements  
due to earthquakes

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# Earthquake in Japan (January 13, 2007)

Luxembourg(49.6 ° N, 6.15 ° E)

Japan (46.272°N, 154.455°E)

Distance from Japan to Luxembourg (forward arc): 8944.3 km

Distance from Japan to Luxembourg (reverse arc): 31086.5 km

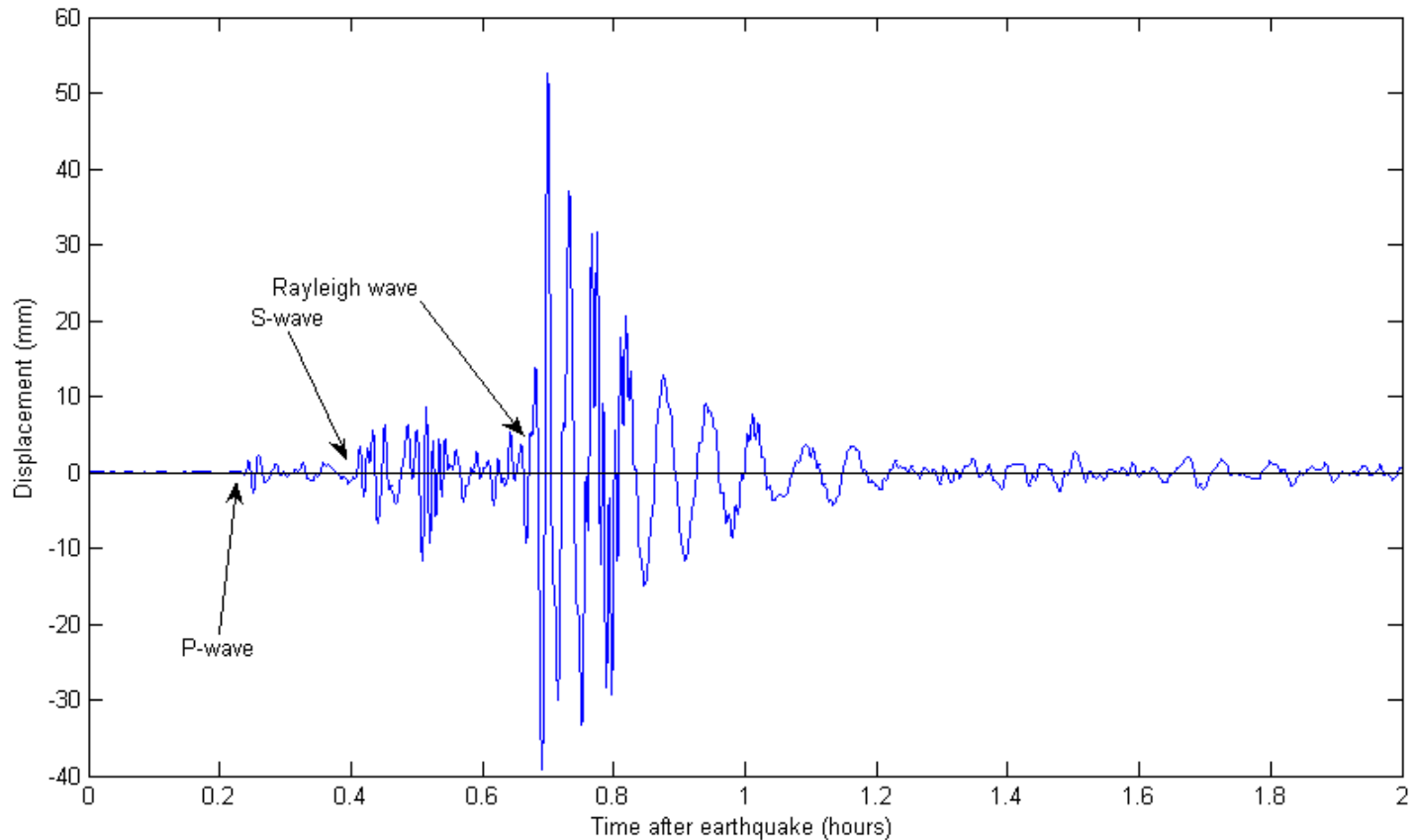
Modeled velocities: 3.97 km/sec forward, 3.54 km/sec reverse

(forward arc across Eurasian craton – higher velocity)

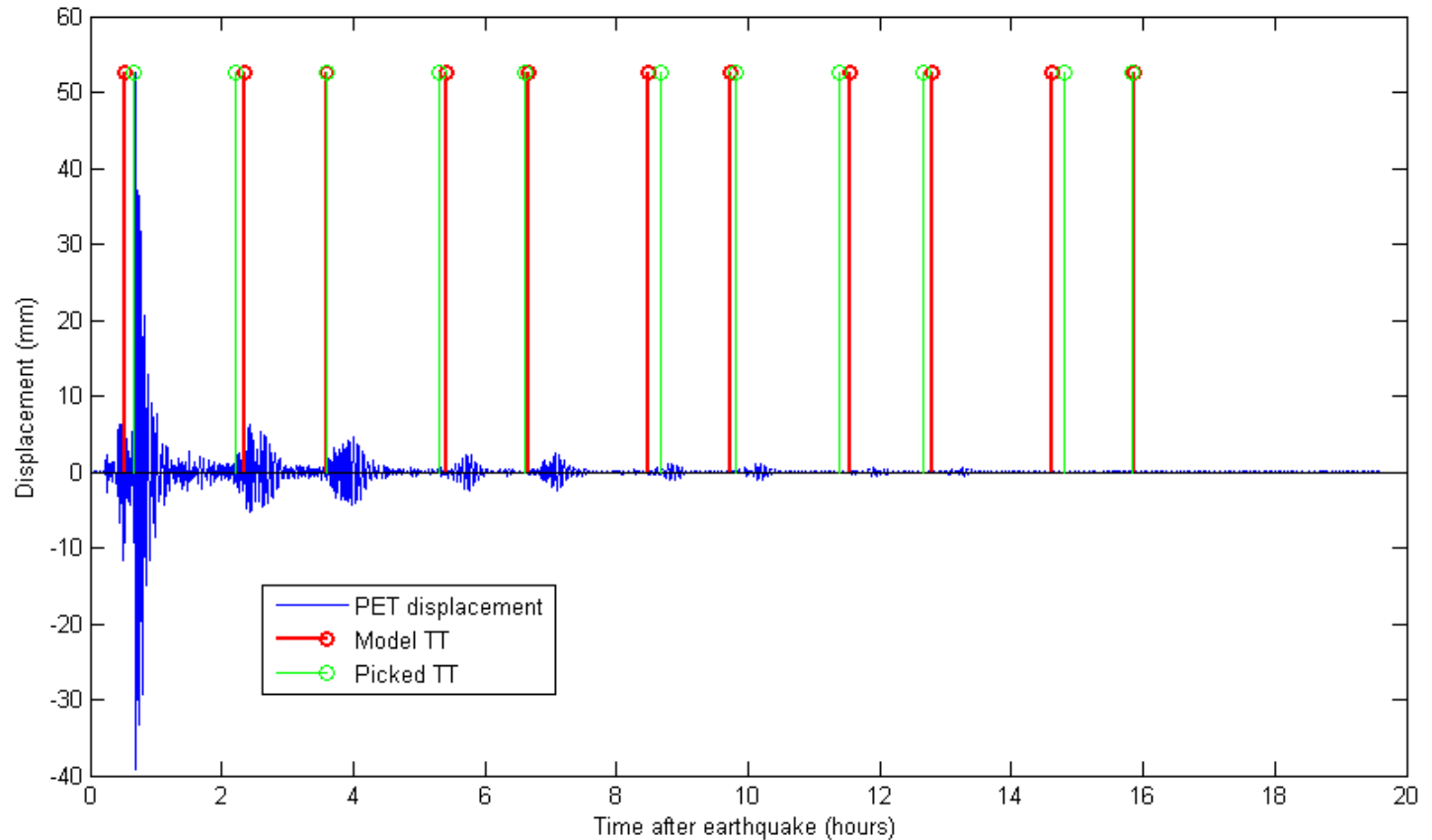
Model travel times, forward arc (hours): 0.70, 3.83, 6.96 ,10.10

Model travel times, reverse arc: 2.43, 5.56, 8.70, 11.83

# Initial earthquake arrival



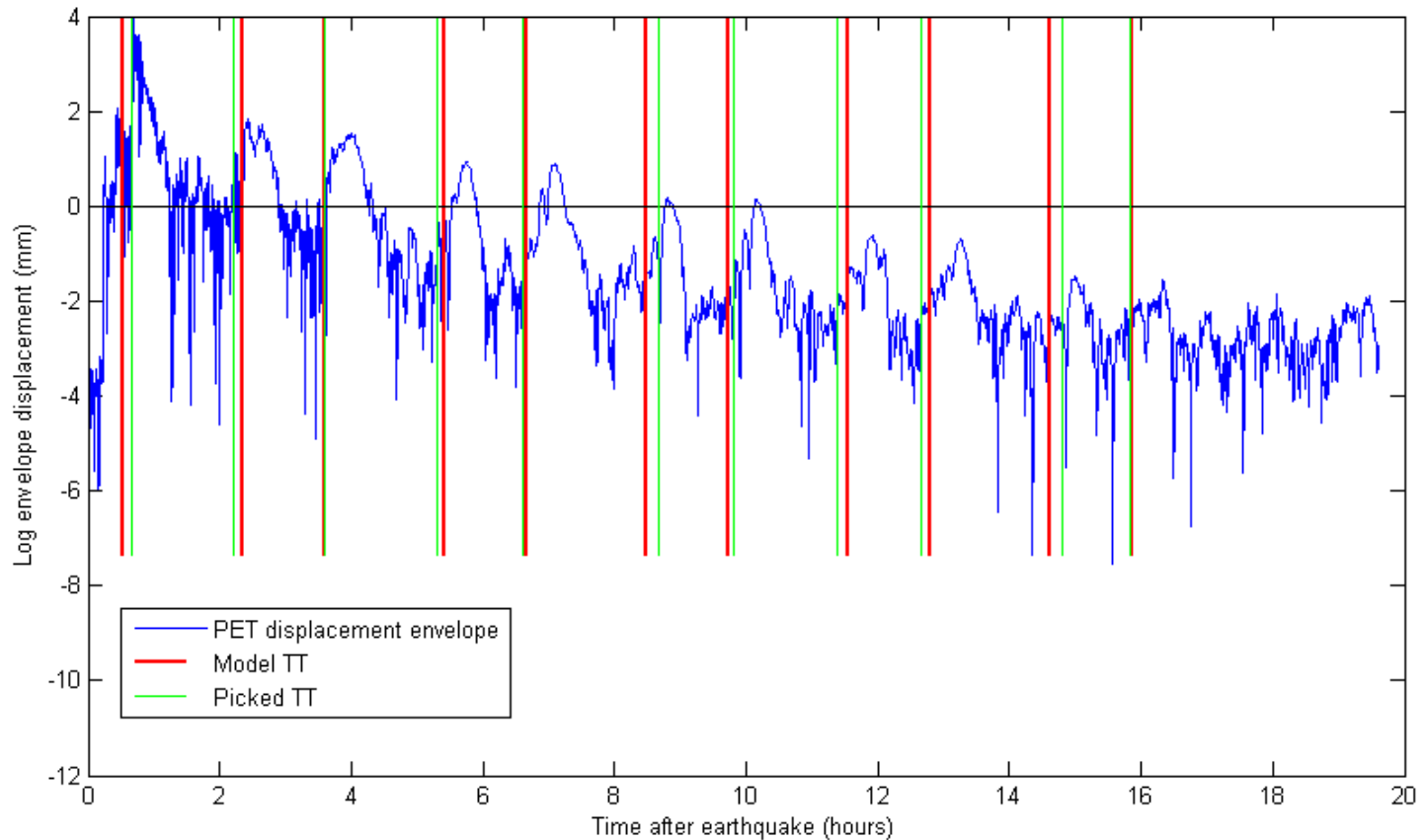
# Surface waves traveling around the earth



- Model times for arrivals assuming 3.97 km/sec forward, 3.54 km/sec reverse
- Picked times from the arrival as seen by the gPhone

# Power law decay of Rayleigh Waves

Logarithm of Position envelope



- Successive amplitudes fall off exponentially