

# SIO15 TOPIC 07: EARTHQUAKE SEISMOLOGY

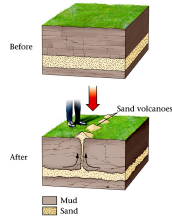
## Leftovers from Lecture 6 Liquefaction

## Earthquakes and other Disasters



(b)  
FIGURE 10.22  
Earth: Portrait of a Planet, 2nd Edition  
Copyright 2015 W. H. Freeman & Company

## Mud Volcanoes

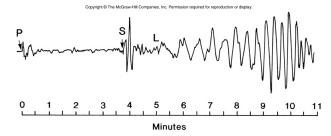


## The 4 Types of Seismic Waves

P waves    S waves    Love waves    Rayleigh waves

**watch video 5c**

## The Phases in a Seismogram



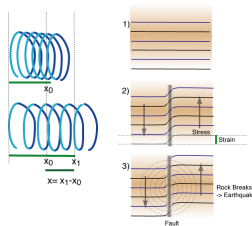
## Locating an Earthquake

**watch video 5c**

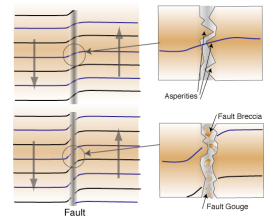


## Earthquake Physics

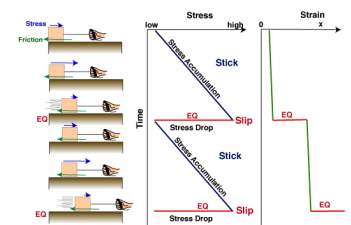
### Stress and Strain



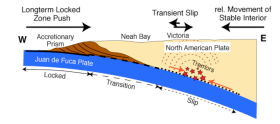
### Asperities and Friction



## Stick-slip Behavior

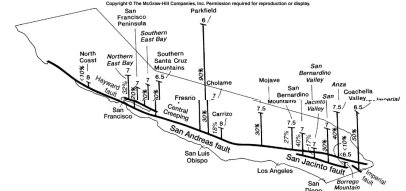


# the Cascadia Megathrust Fault

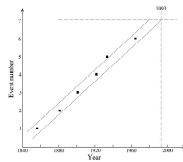


## Earthquake Monitoring and Prediction

EQ probabilities at the SAF



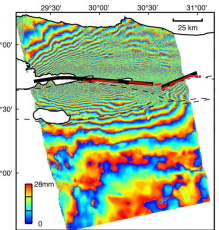
EQ Prediction and Parkfield (the seismic gap method)



Earthquake Triggering

Rupture Propagation Forecast

InSAR, GPS and aseismic movement along a fault



## Hazard Assessment and Mitigation

