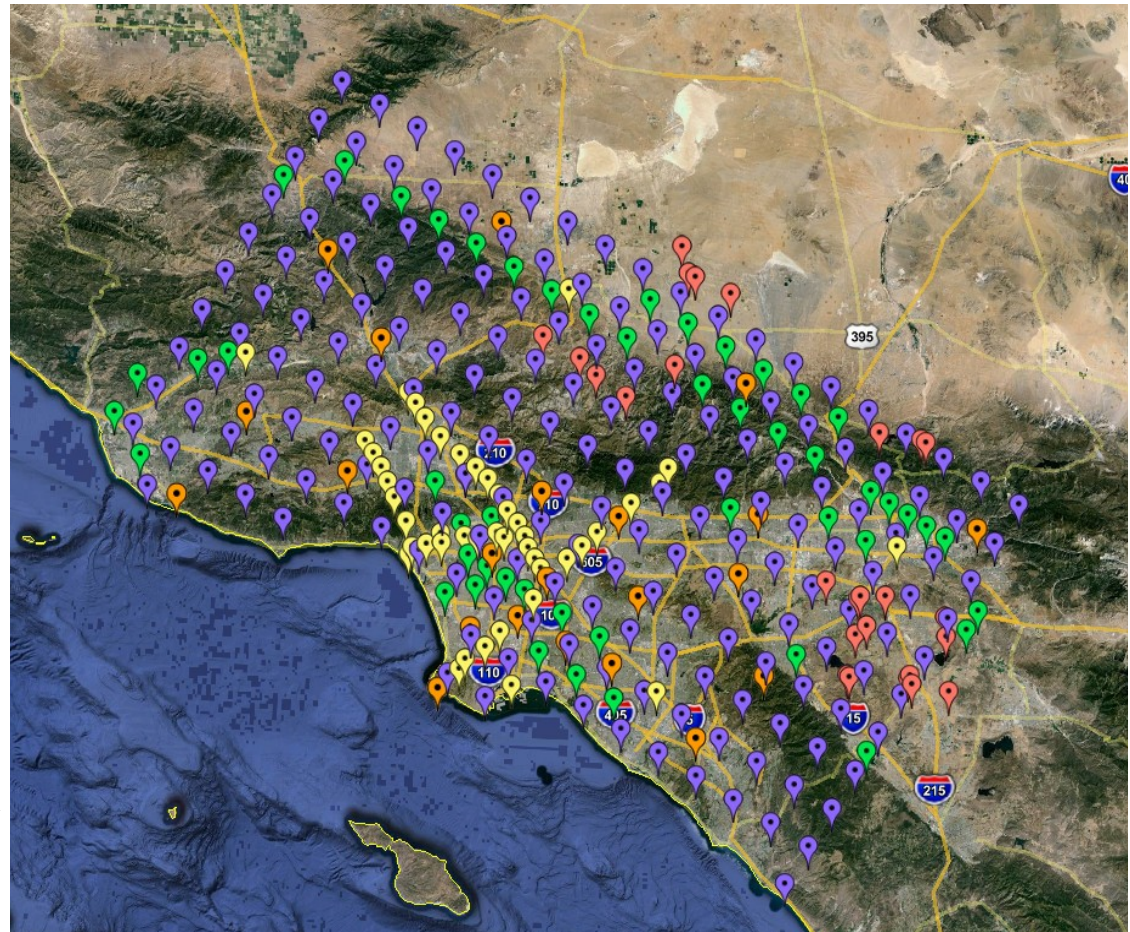


CyberShake Review

Scott Callaghan
UGMS Meeting
May 16, 2016

CyberShake Study 15.4 Review

- 1 Hz maximum deterministic frequency
- CVM-S4.26 velocity model
- 336 sites (50 new ones)
 - Includes 14 UGMS sites
- Graves & Pitarka (2014) rupture generator
- UCERF 2 ERF
- V_s min = 500 m/s
- AWP-ODC SGT code (100m grid spacing)
- No background seismicity

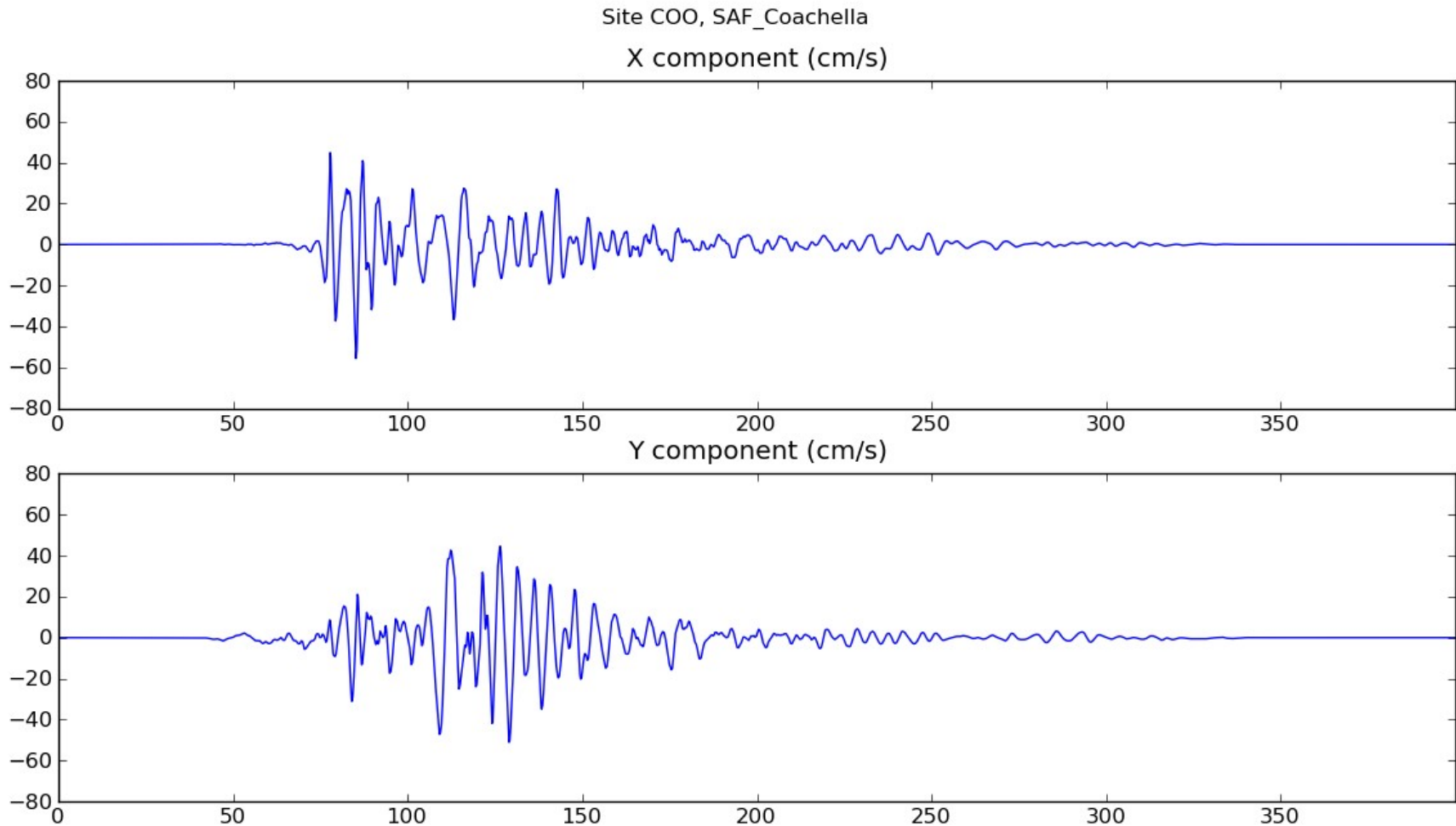


CyberShake Process

- For each CyberShake site:
 - UCERF 2 ruptures within 200 km considered
 - Slip and hypocenter variability added, creating 500,000 events
 - 2-component seismograms generated for each event
 - Seismograms processed to obtain intensity measures (geometric mean, RotD50, RotD100) at many periods
 - Intensity measures combined with UCERF 2 probabilities to produce hazard curves
 - Curves convolved with fragility function to obtain period-dependent MCER values

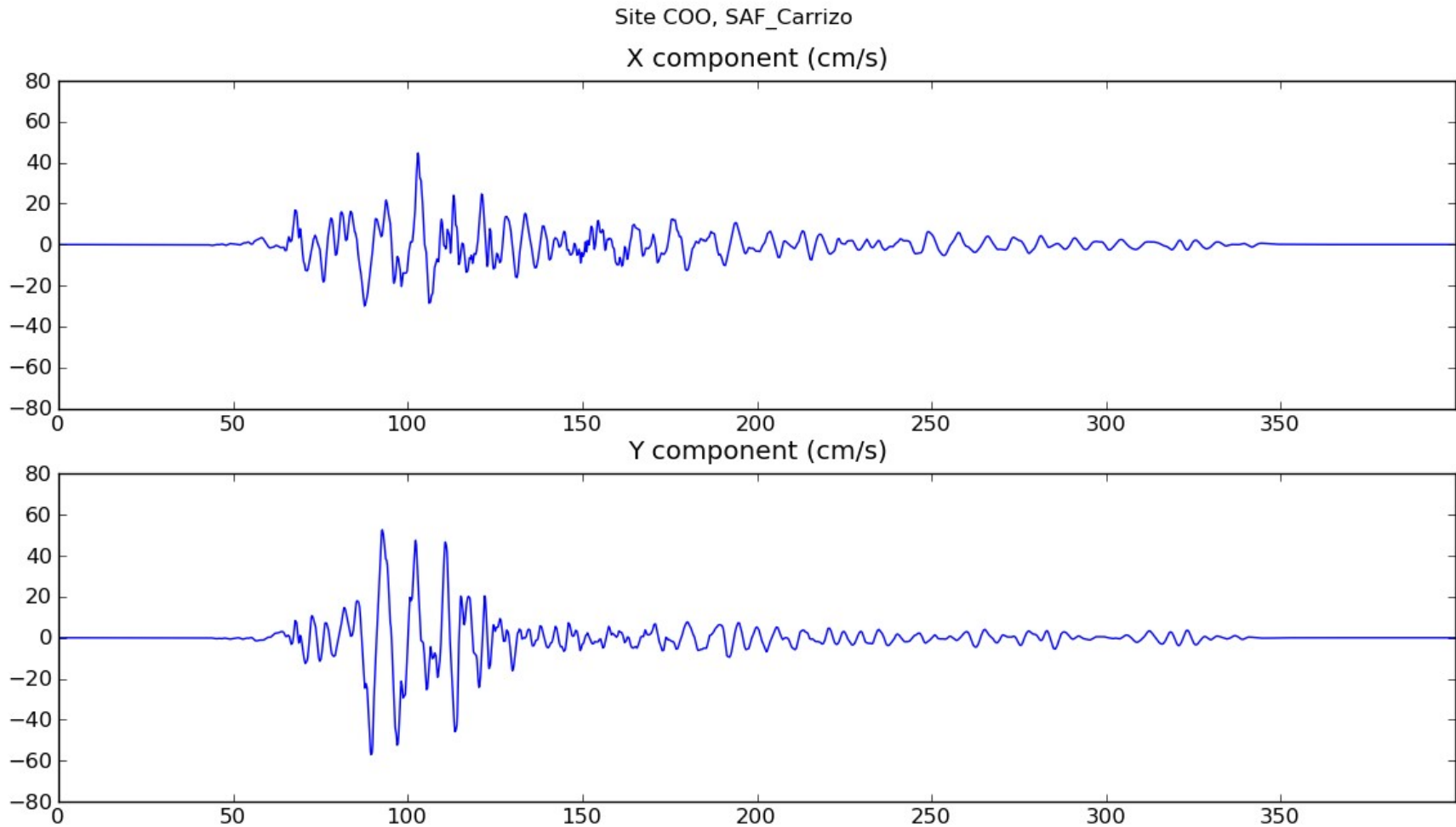
Sample seismograms

Site: COO (Compton), Event: S. San Andreas, M8.05
Hypocenter: near Coachella



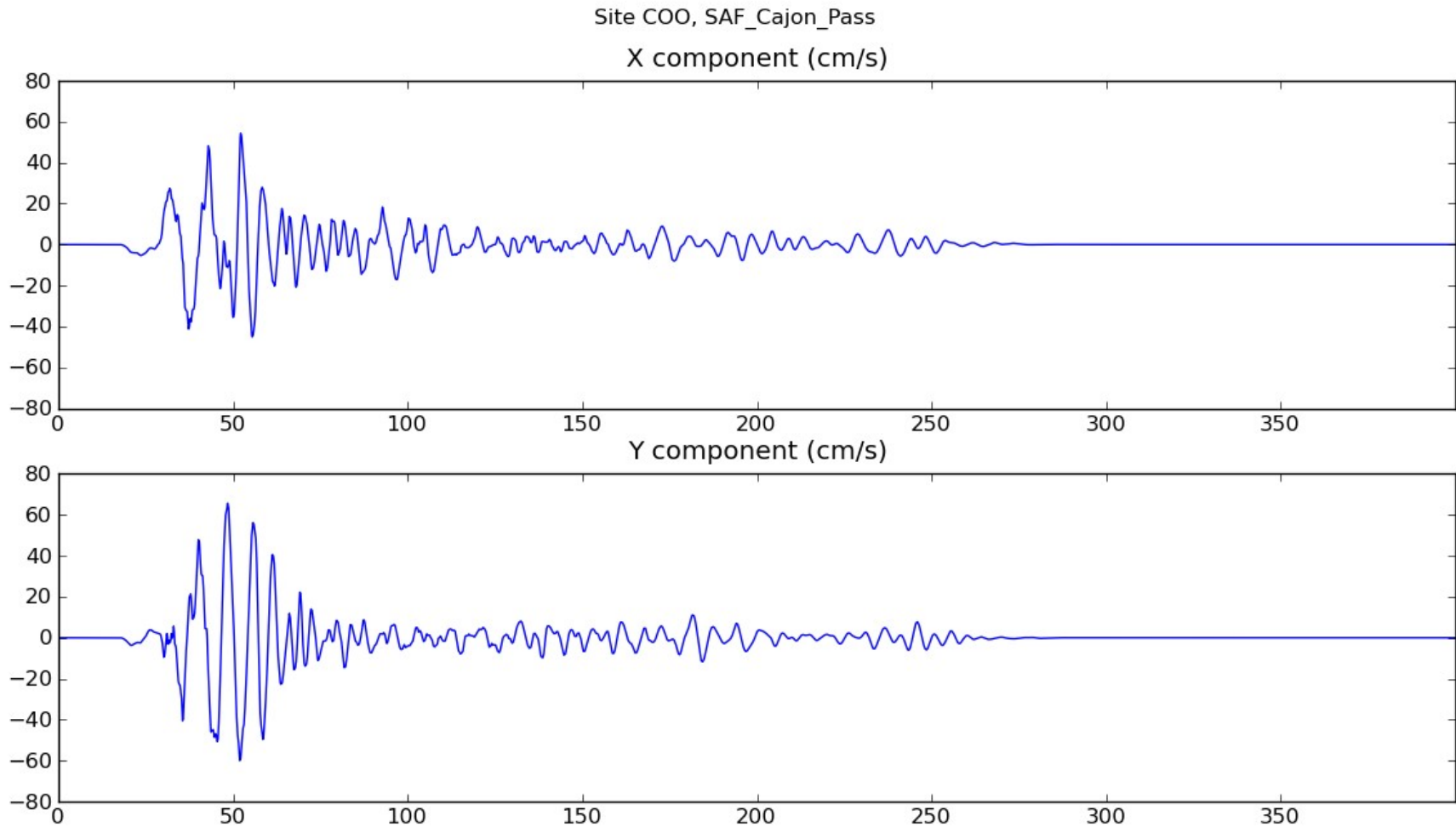
Sample seismograms

Site: COO (Compton), Event: S. San Andreas, M8.05
Hypocenter: near Carrizo Plain



Sample seismograms

Site: COO (Compton), Event: S. San Andreas, M8.05
Hypocenter: near Cajon Pass



Sample Hazard Curves (COO)

RotD100, 2 second

RotD100, 3 second

