

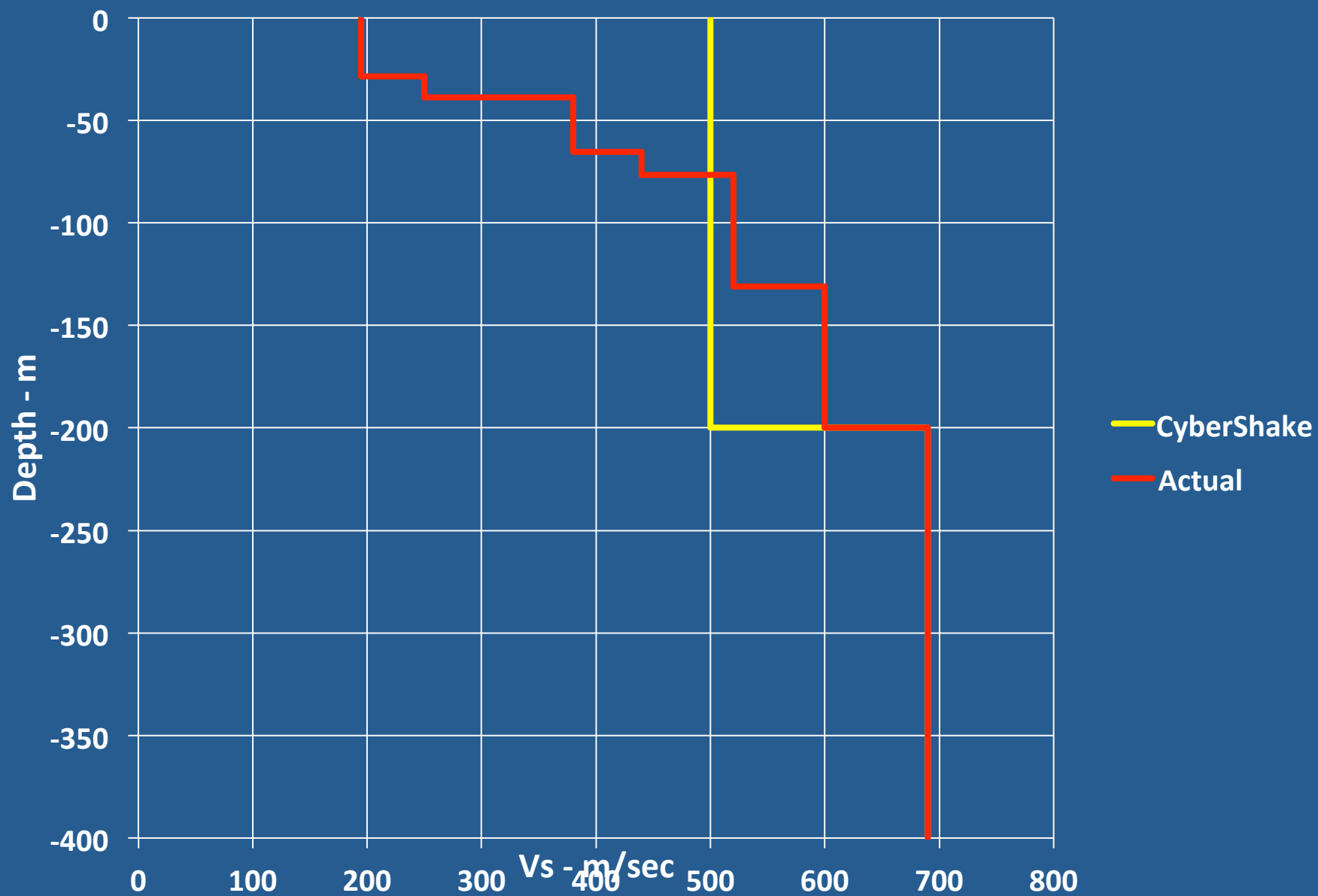
Site-Response Analysis

Purpose: Check Effect on long period response spectra to realistic soil properties in upper 200m

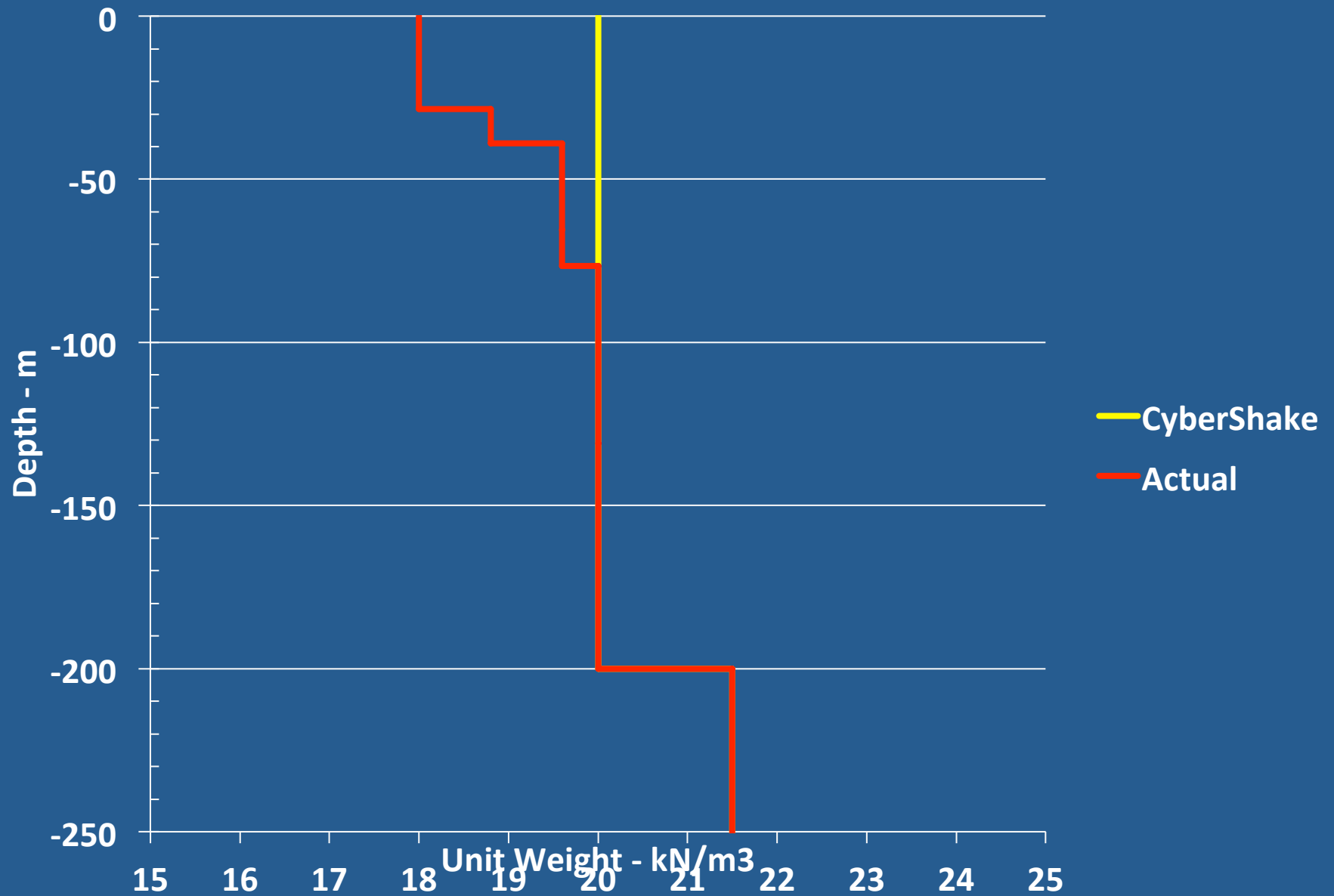
Test Case: Carson, s429

- 1-D Linear & nonlinear SRA
- Actual & CyberShake soil properties in upper 200m
- Shake software
- Input-outcrop at 200-m depth: 1978
Tabas, Iran accelerogram (M7.4)

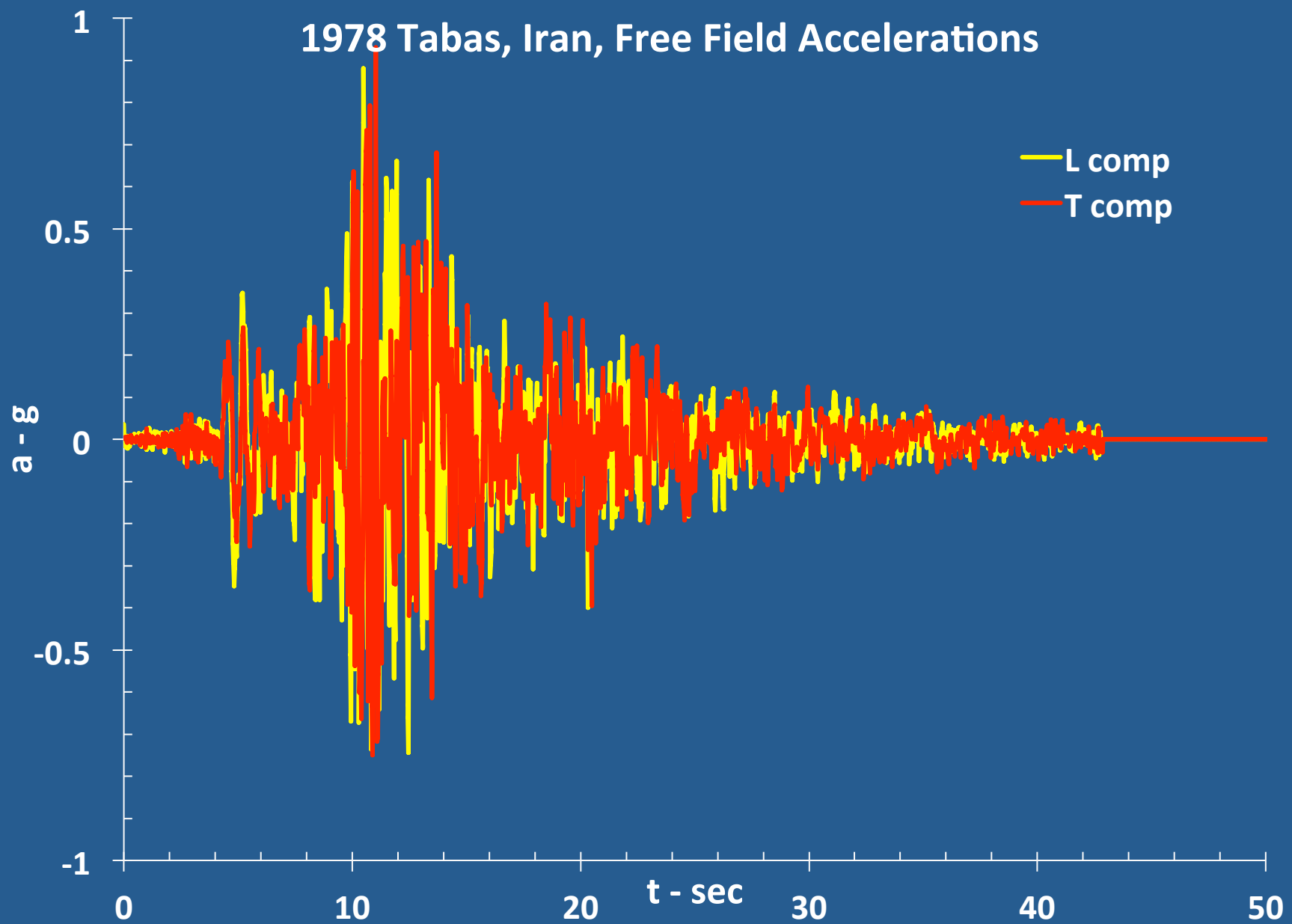
Vs Profiles. Carson Site, s429



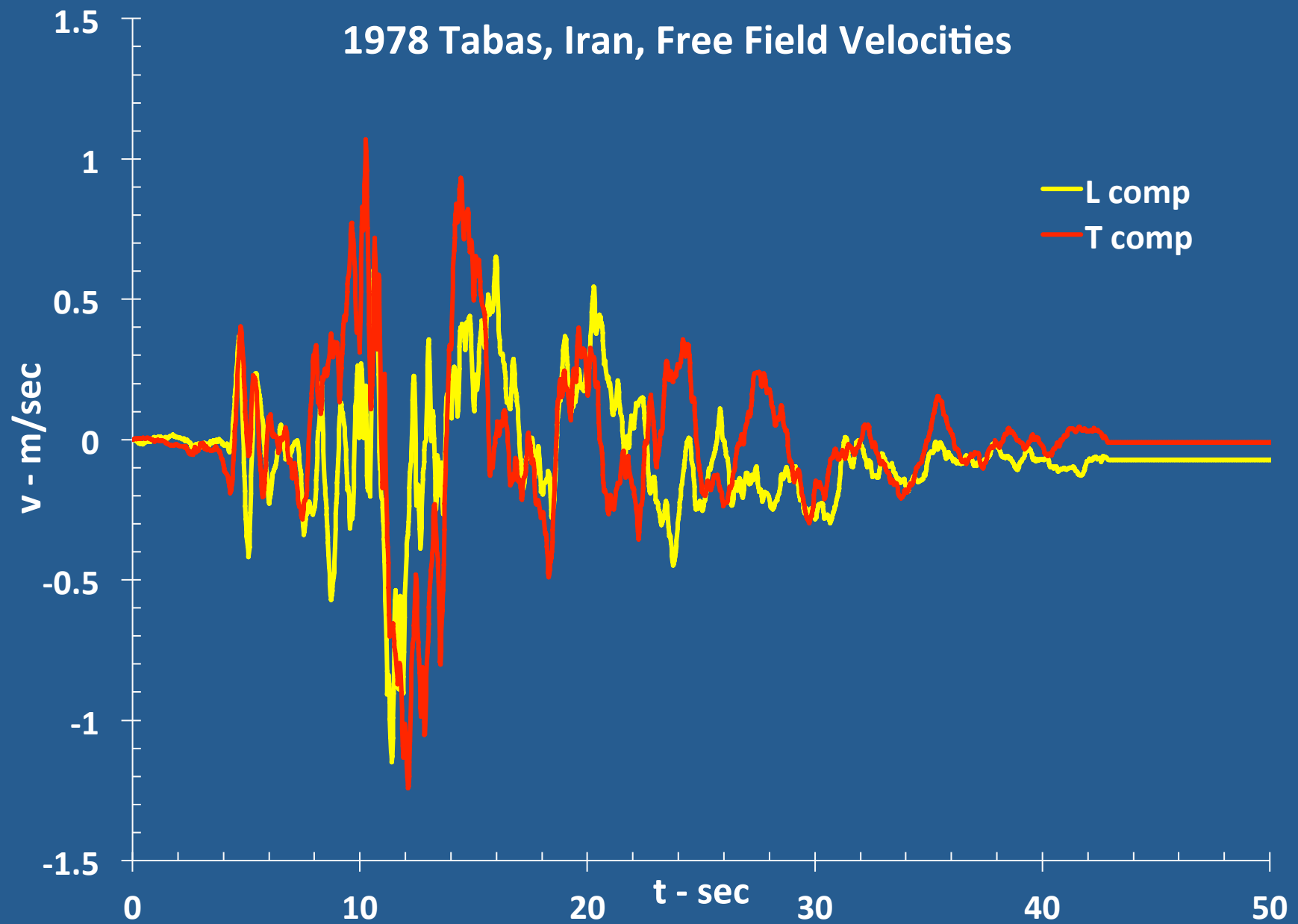
Density Profiles. Carson Site, s429



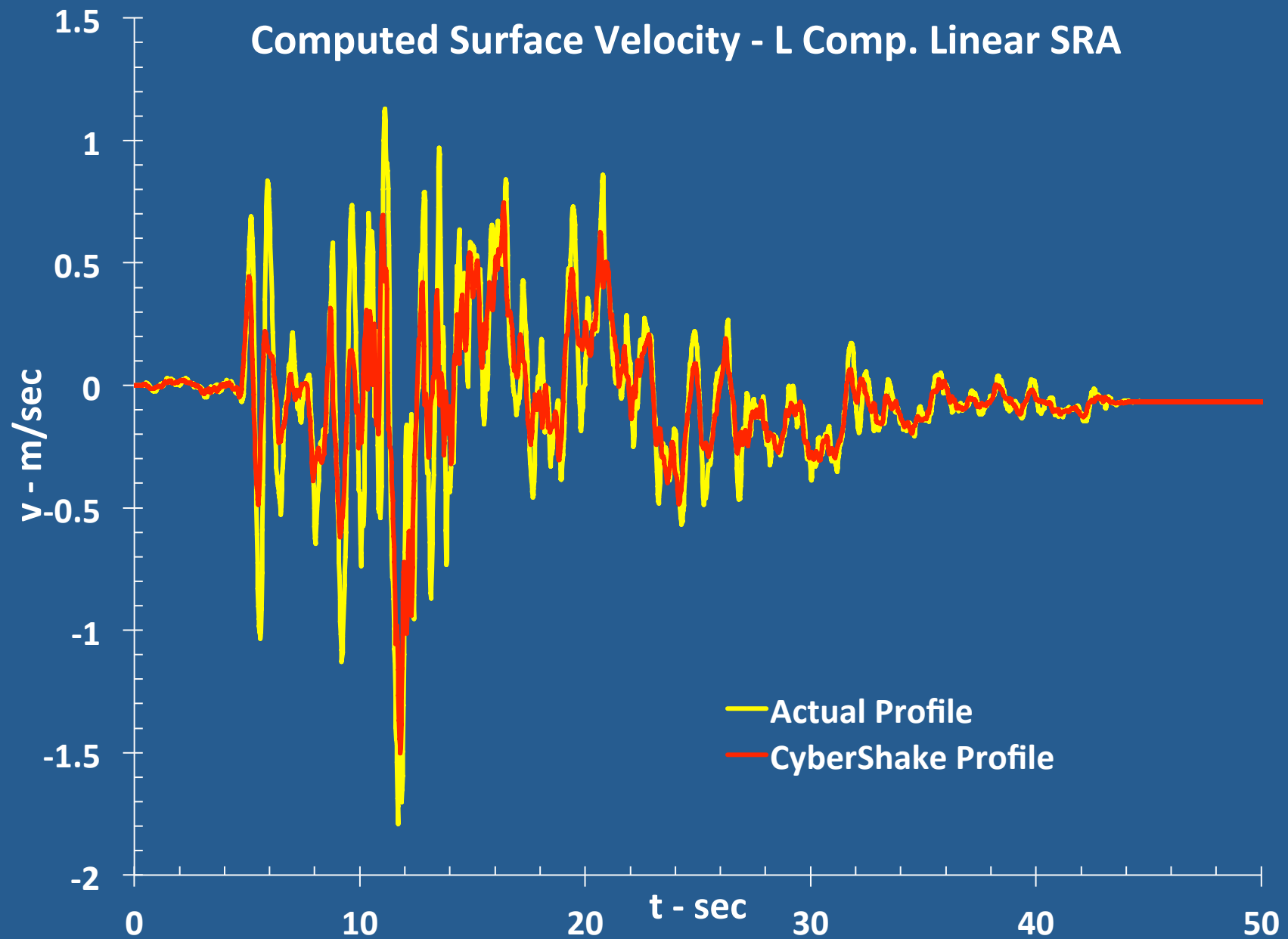
1978 Tabas, Iran, Free Field Accelerations



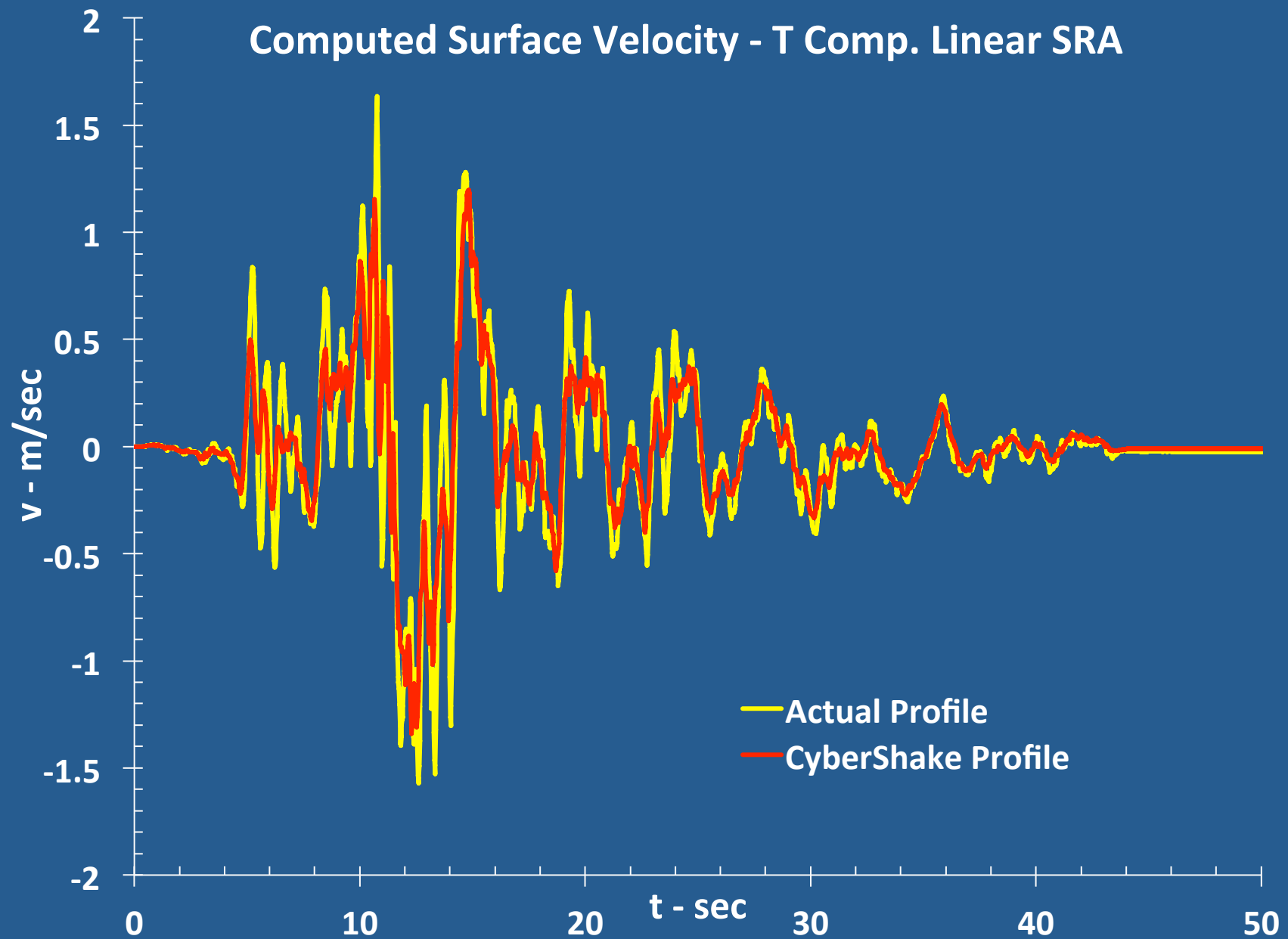
1978 Tabas, Iran, Free Field Velocities



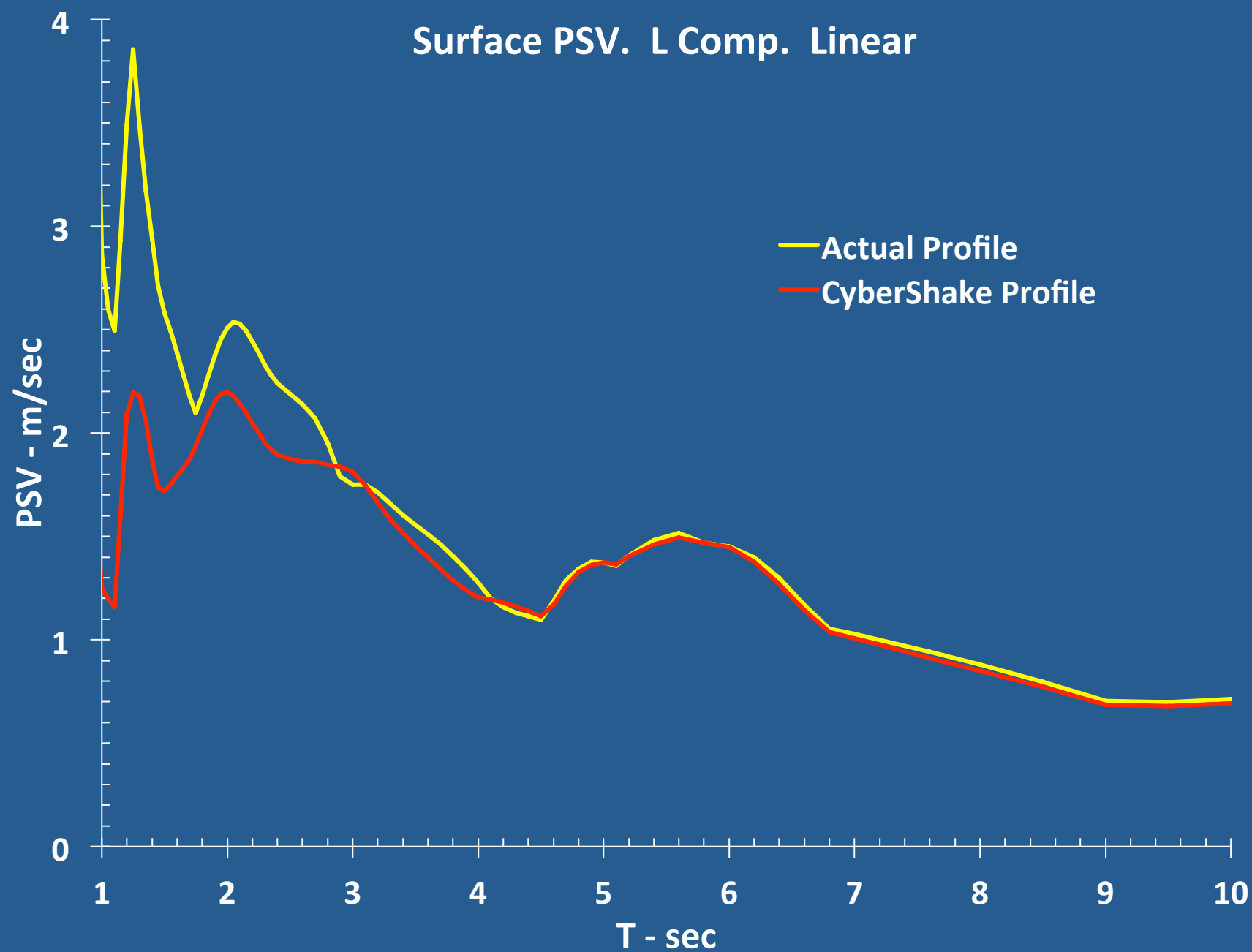
Computed Surface Velocity - L Comp. Linear SRA



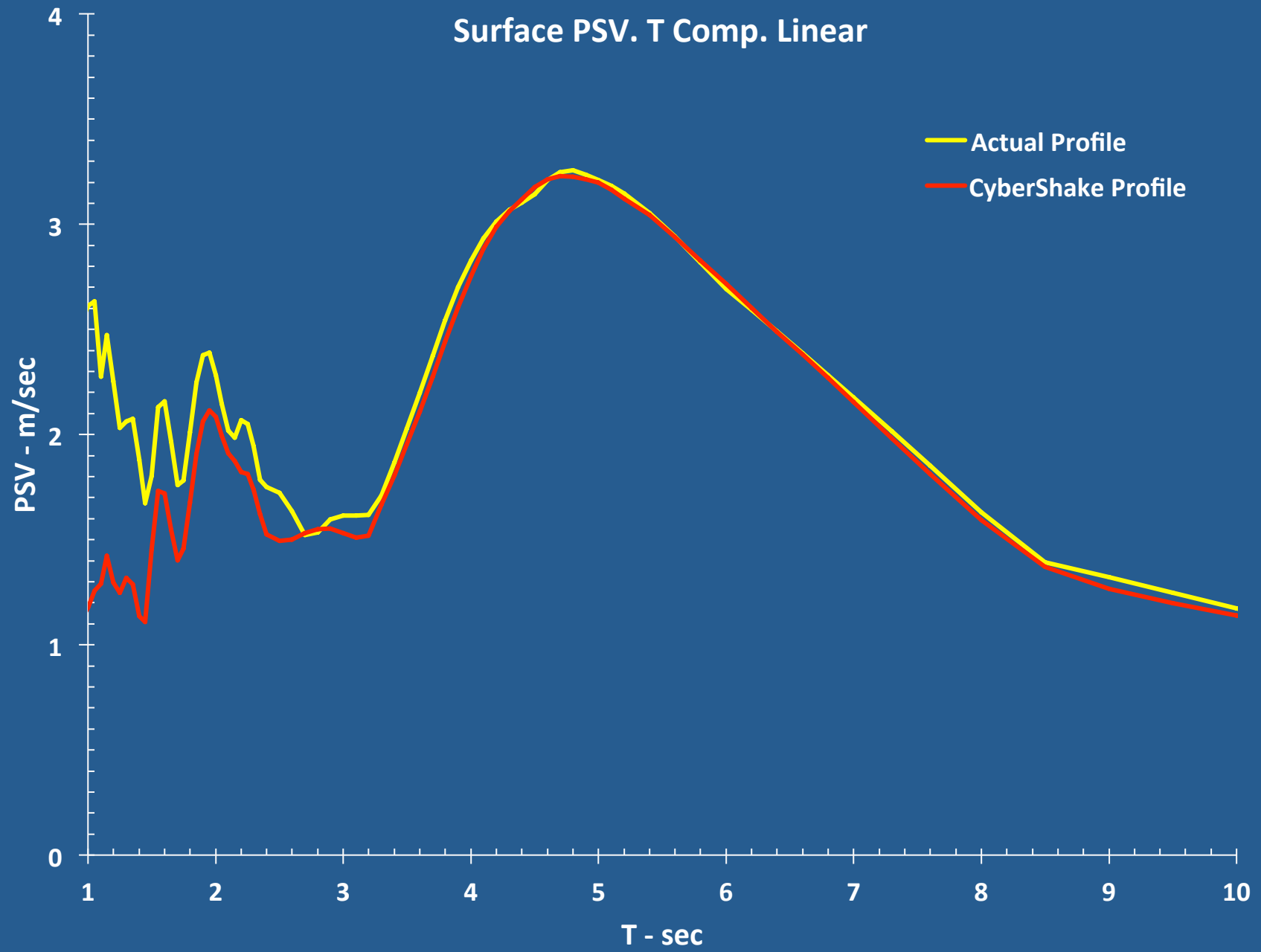
Computed Surface Velocity - T Comp. Linear SRA



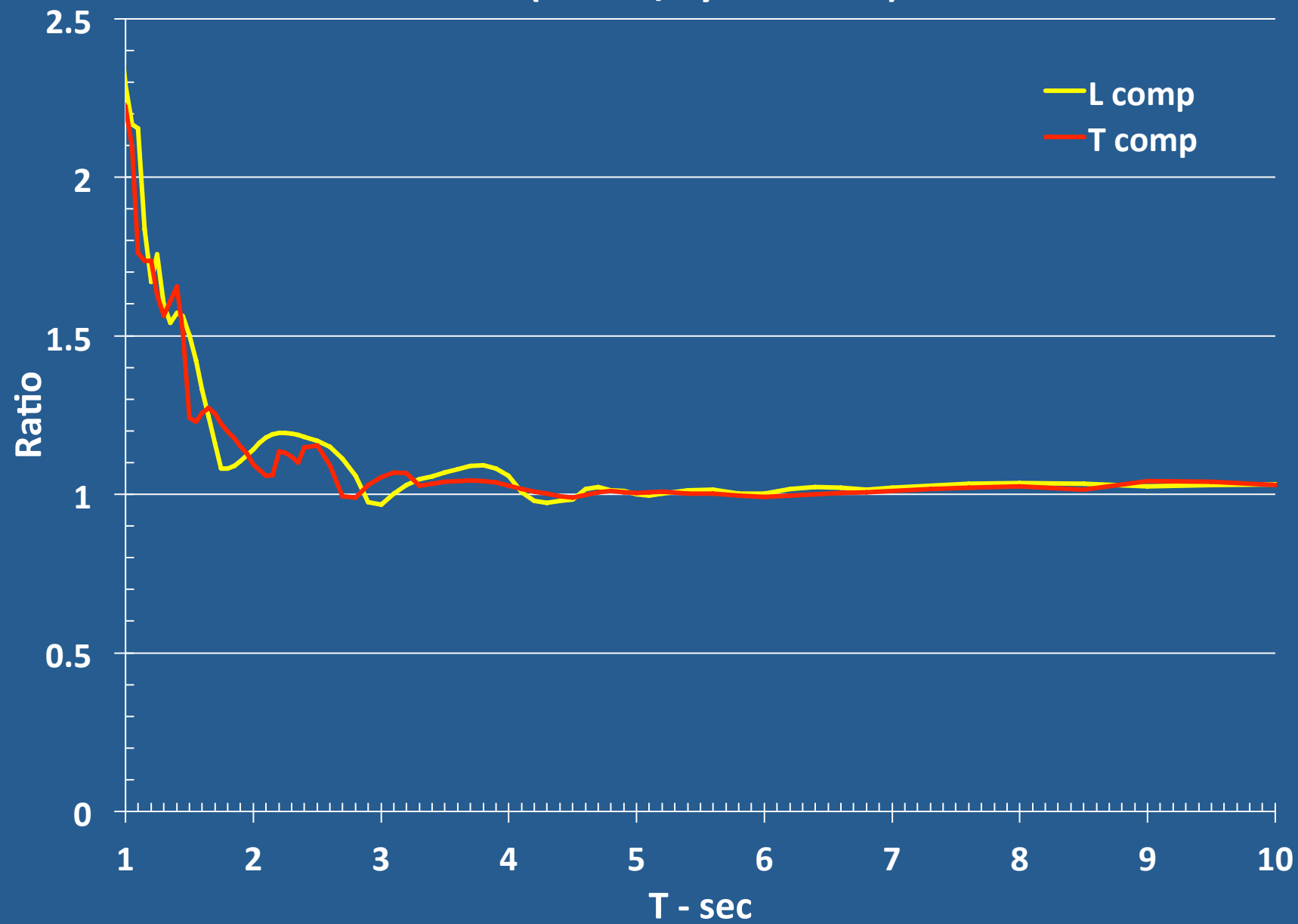
Surface PSV. L Comp. Linear

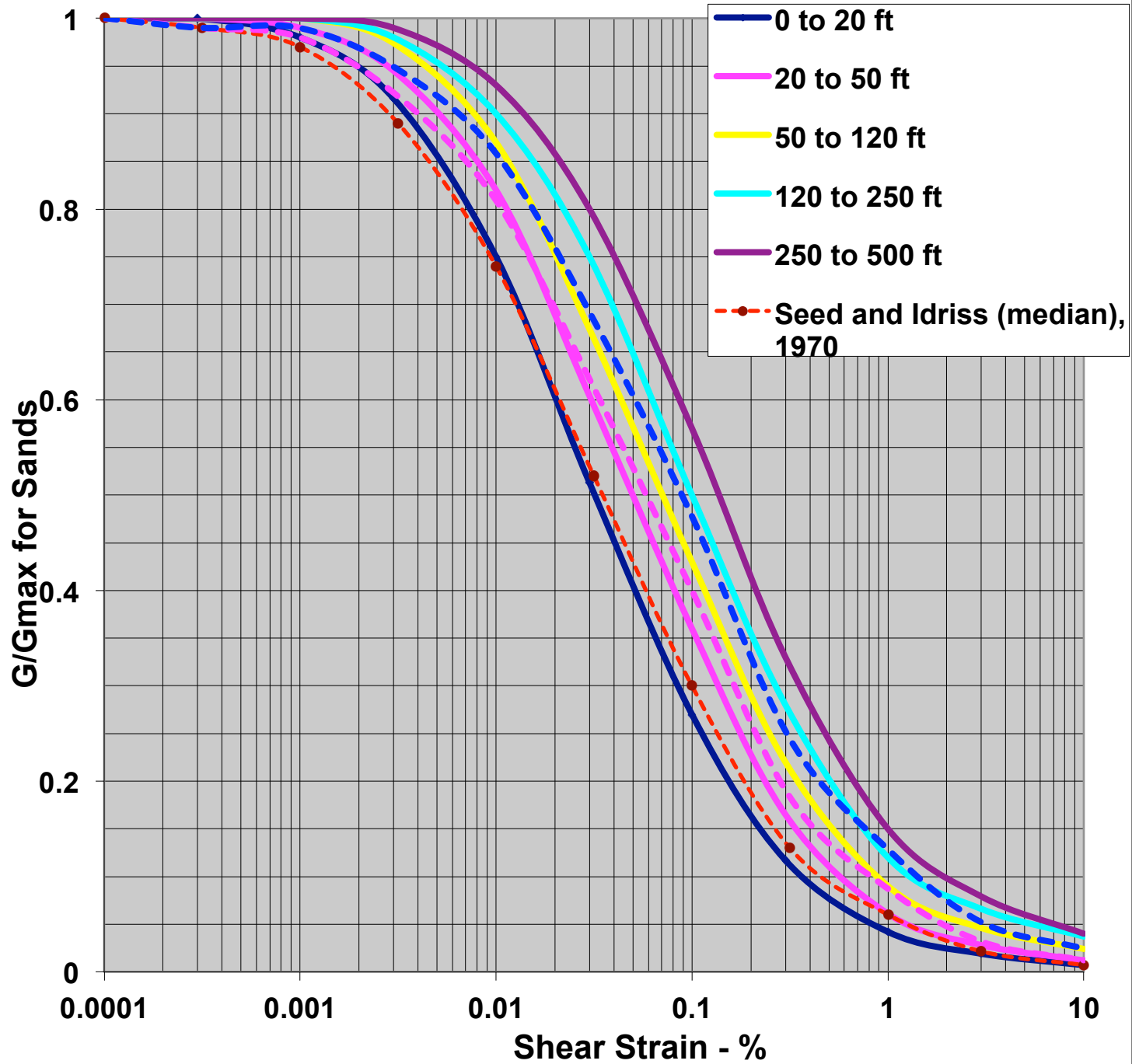


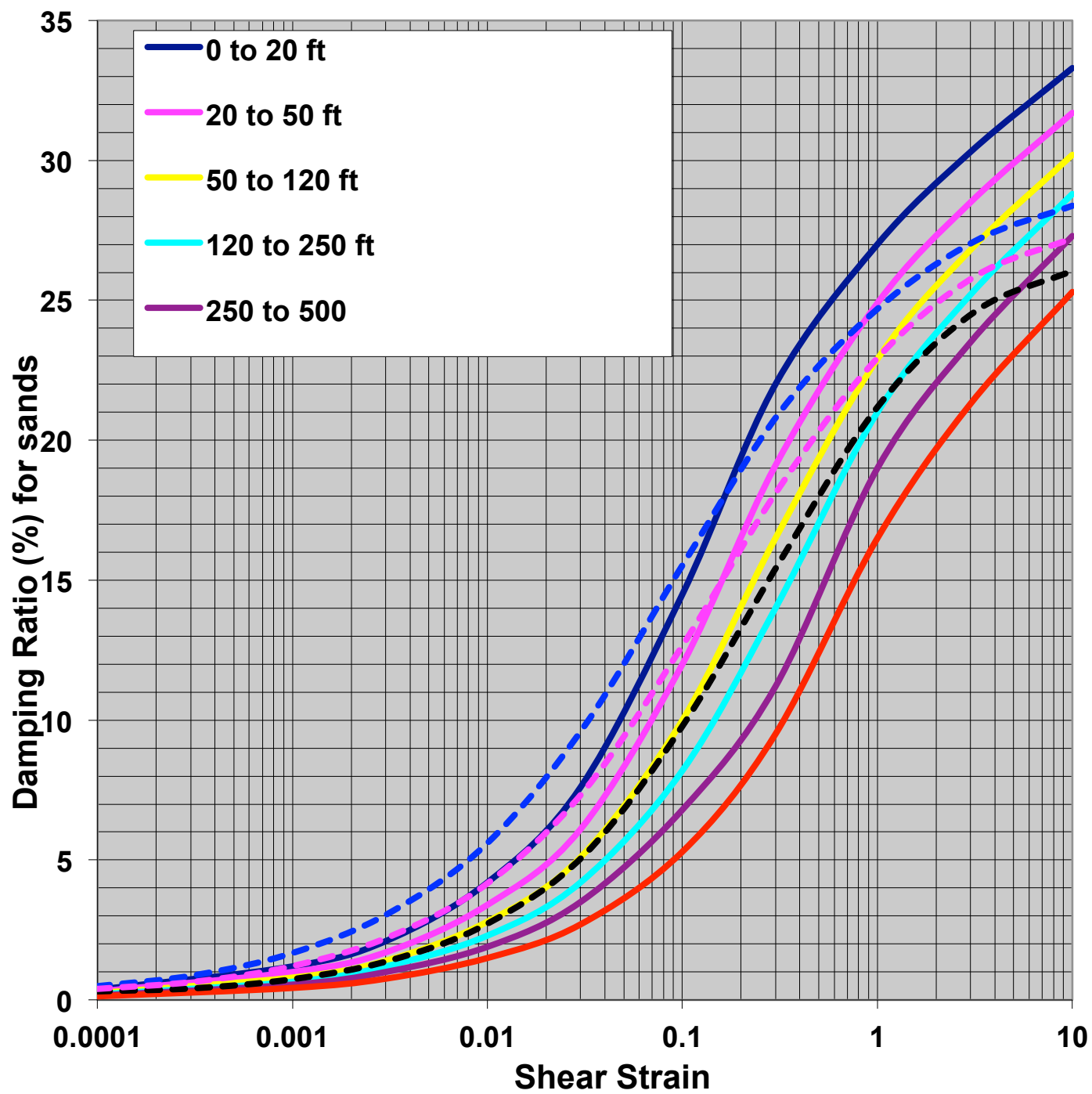
Surface PSV. T Comp. Linear



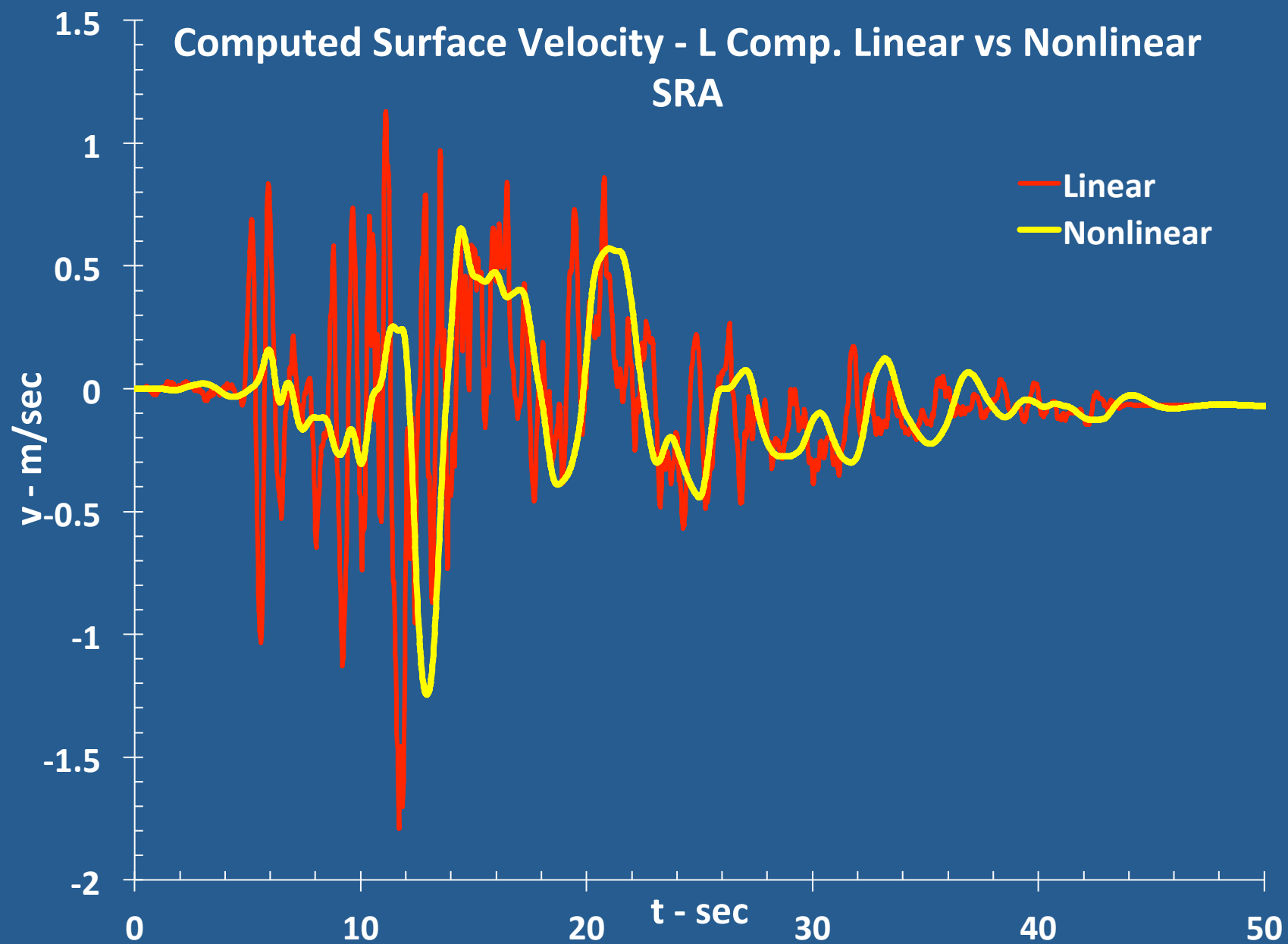
PSV Ratios (Actual/CyberShake). Linear.



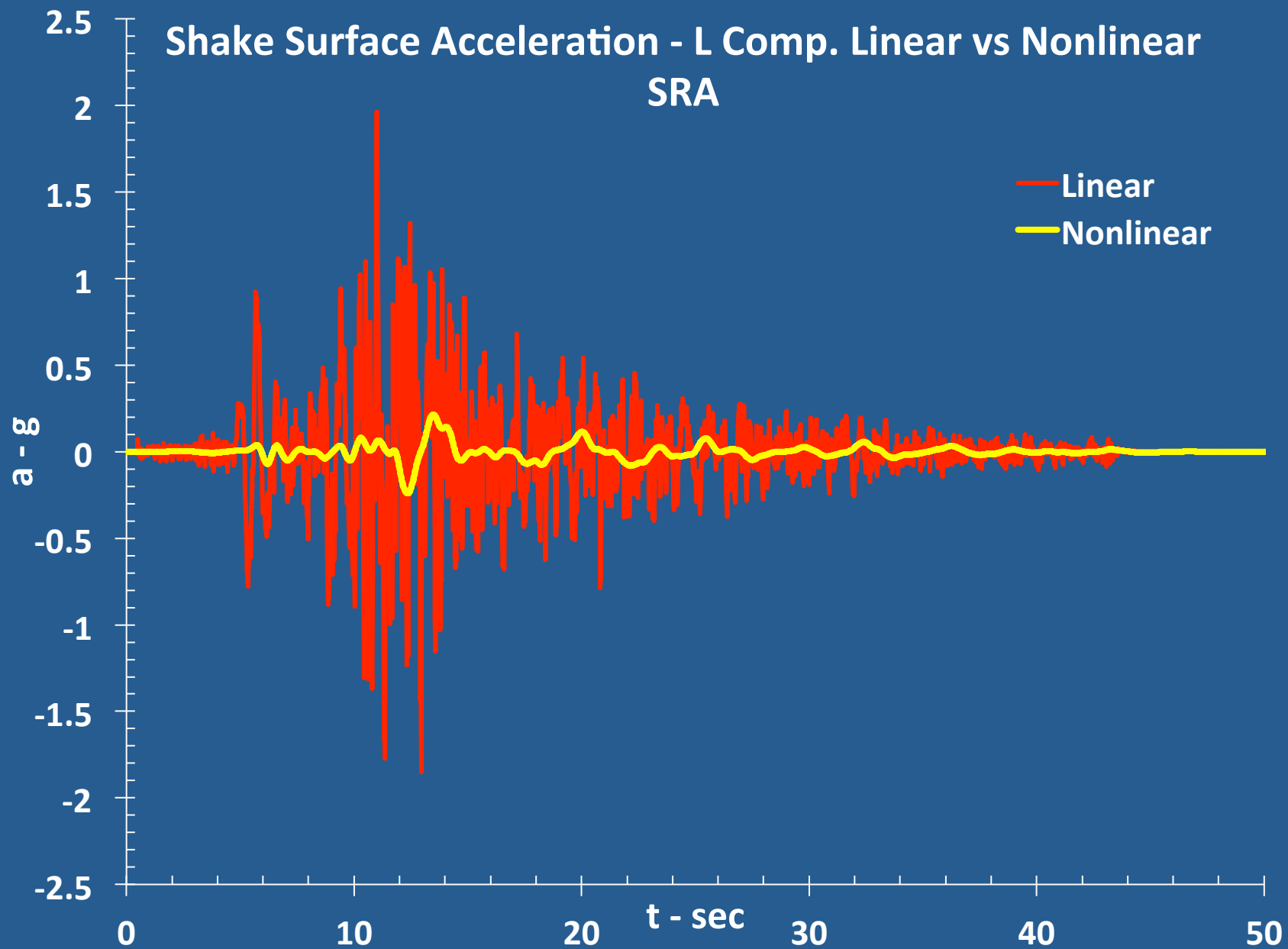




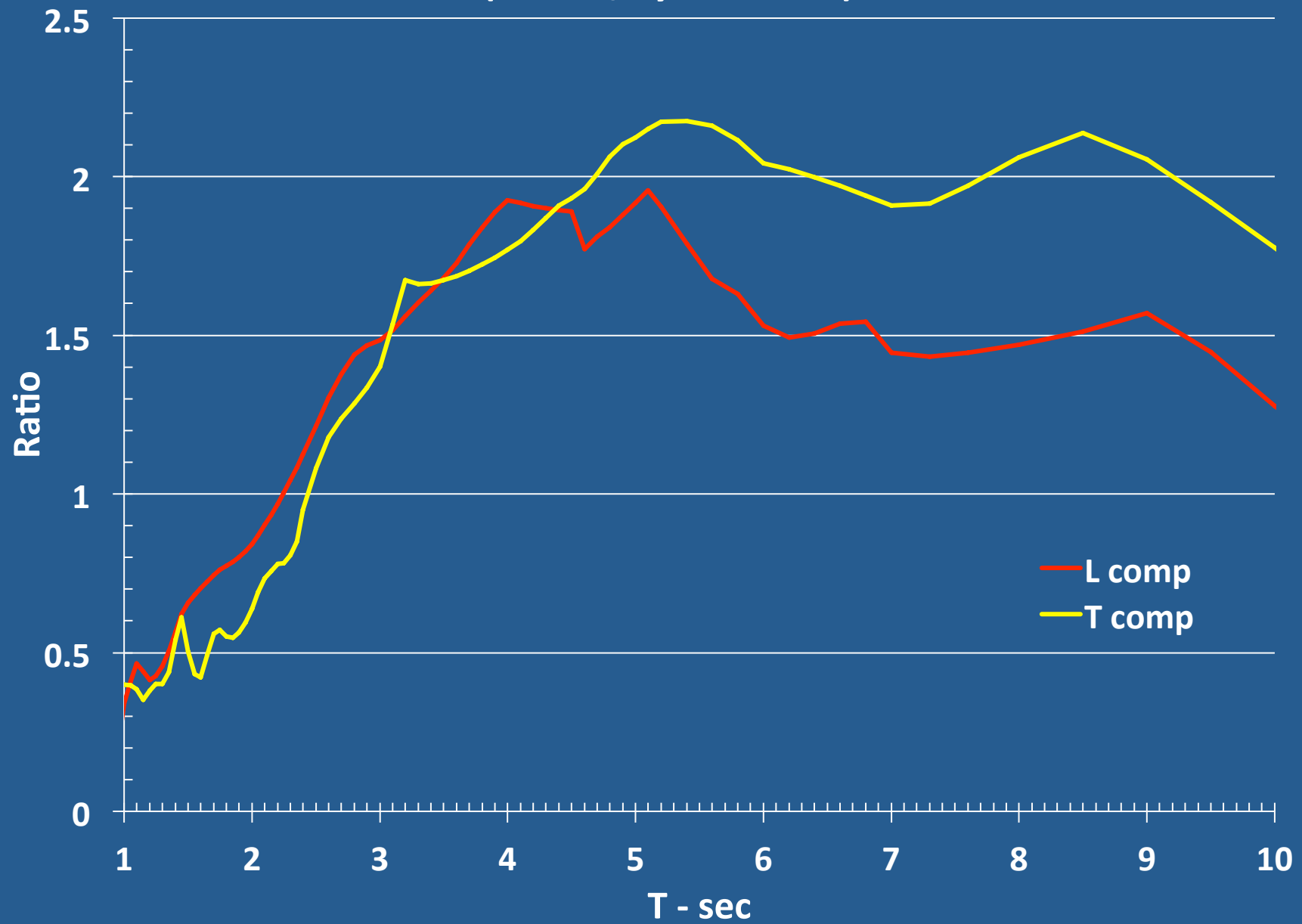
Computed Surface Velocity - L Comp. Linear vs Nonlinear SRA

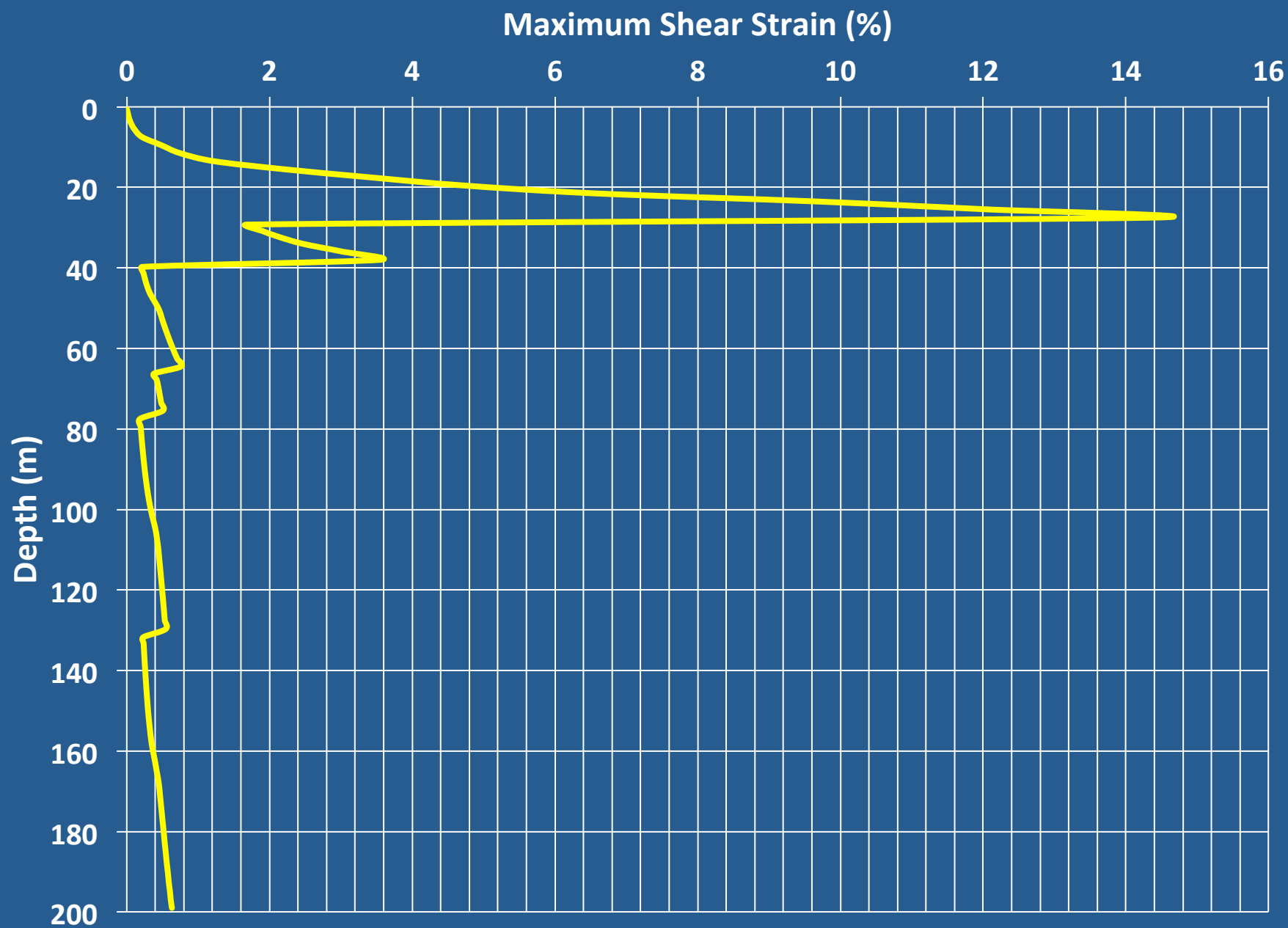


Shake Surface Acceleration - L Comp. Linear vs Nonlinear SRA



PSV Ratios (Actual/CyberShake). Non-Linear.

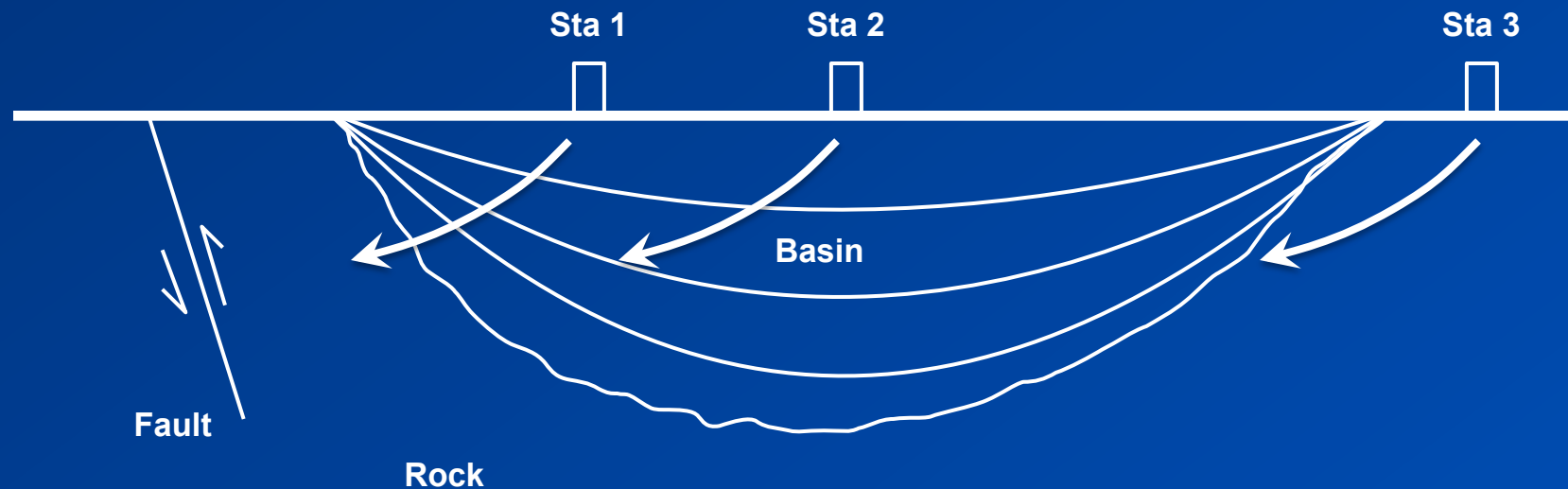




Validation of Simulations

Validated against recordings from 1994 Northridge earthquake

Inverse problem: estimate dynamic rupture characteristics from set of motions



Validation of Simulations

Validated against recordings from 1994 Northridge earthquake

Forward simulation: compute motion at different set of recording stations

