Linear Site Amplification Model Comparisons

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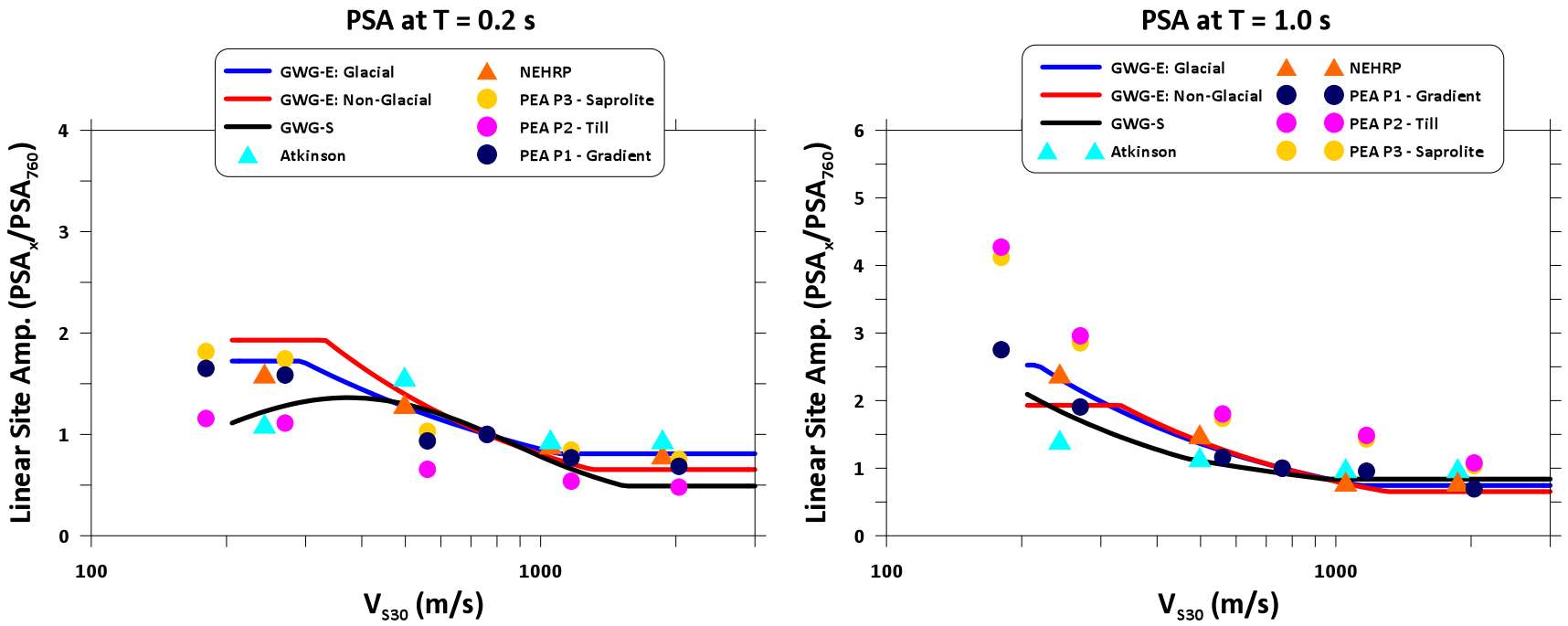
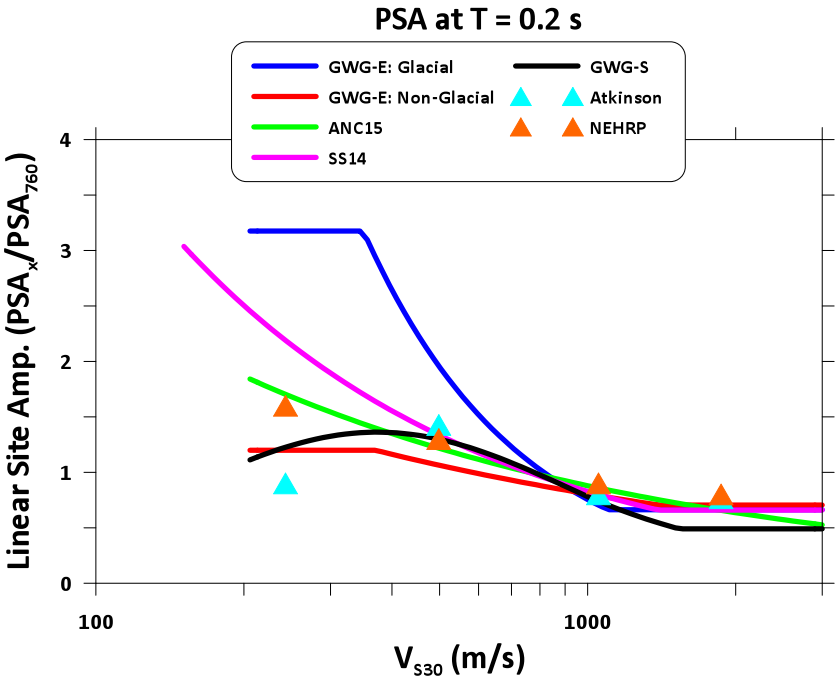
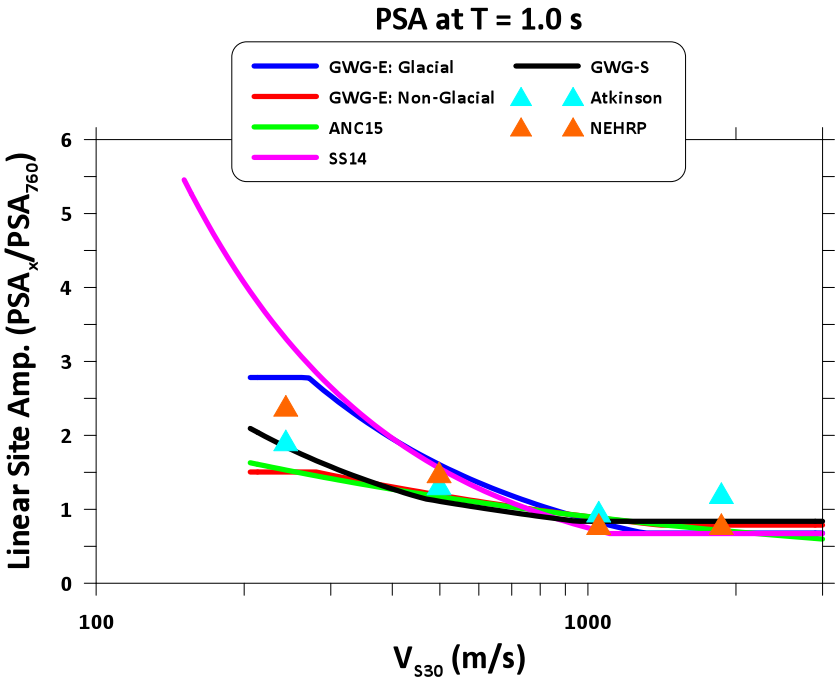
Outline

1. Models in V_{S30} space
2. Predicted amplification in oscillator period space

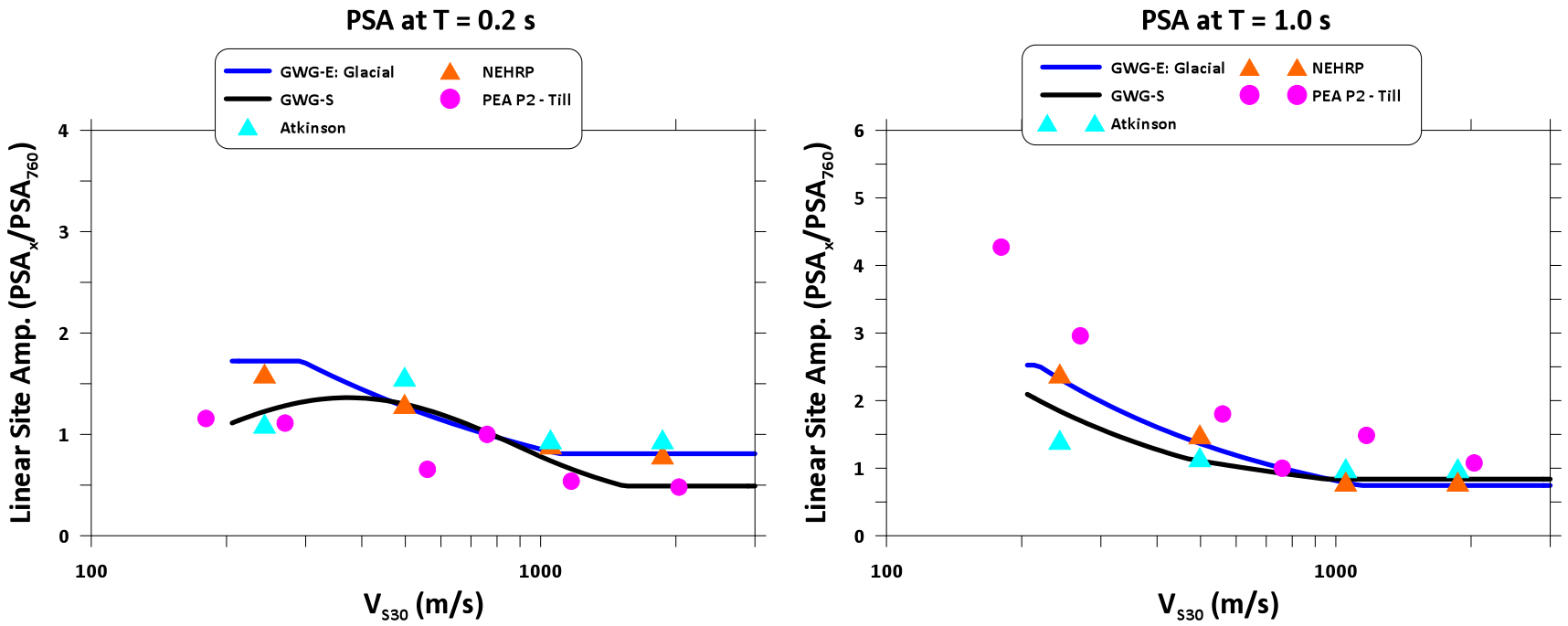
Model Comparisons in V_{S30} Space - All



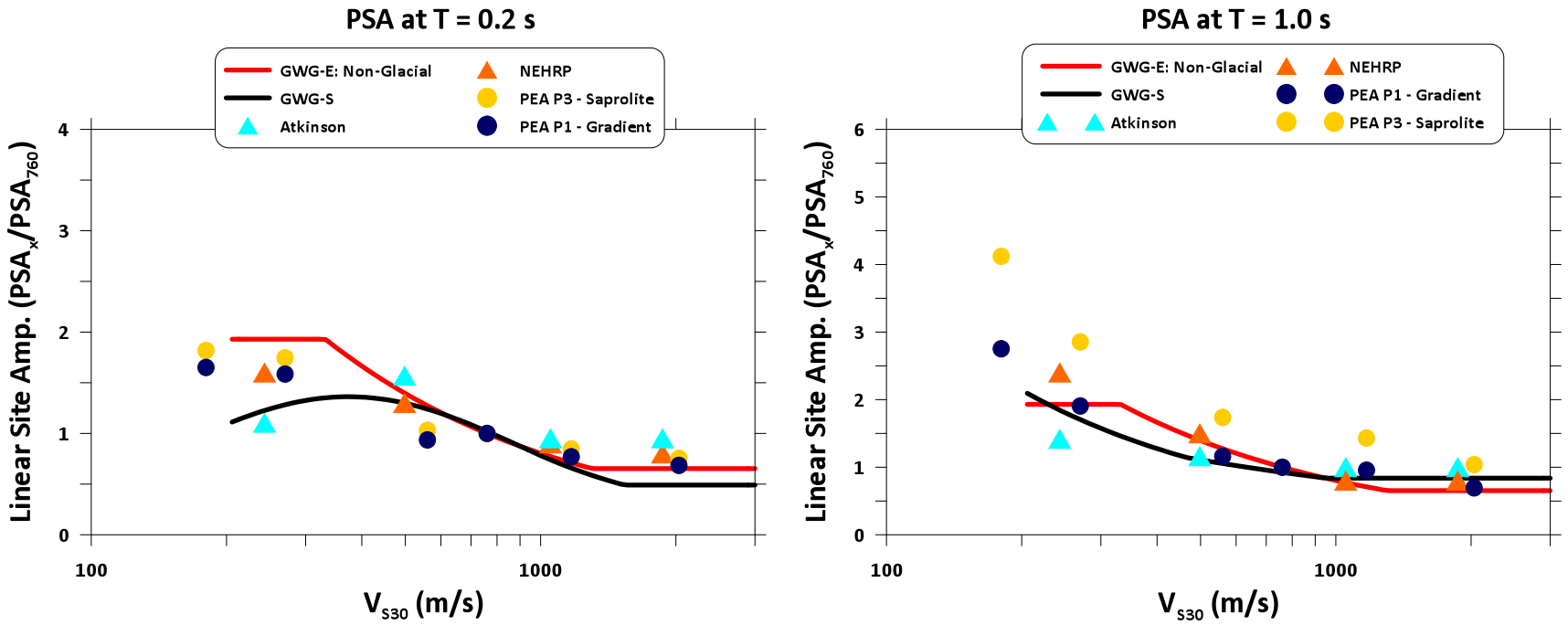

PSA at T = 0.2 s
GWG-E: Glacial
GWG-E: Non-Glacial
ANC15
SS14
GWG-S
Atkinson
NEHRP
Linear Site Amp. (PSA$_x$/PSA$_{760}$)
0
1
2
3
4
100
1000
V$_{S30}$ (m/s)


PSA at T = 1.0 s
GWG-E: Glacial
GWG-E: Non-Glacial
ANC15
SS14
GWG-S
Atkinson
NEHRP
Linear Site Amp. (PSA$_x$/PSA$_{760}$)
0
1
2
3
4
5
6
100
1000
V$_{S30}$ (m/s)

Model Comparisons in V_{S30} Space - Glaciated



Model Comparisons in V_{S30} Space – Non-Glaciated

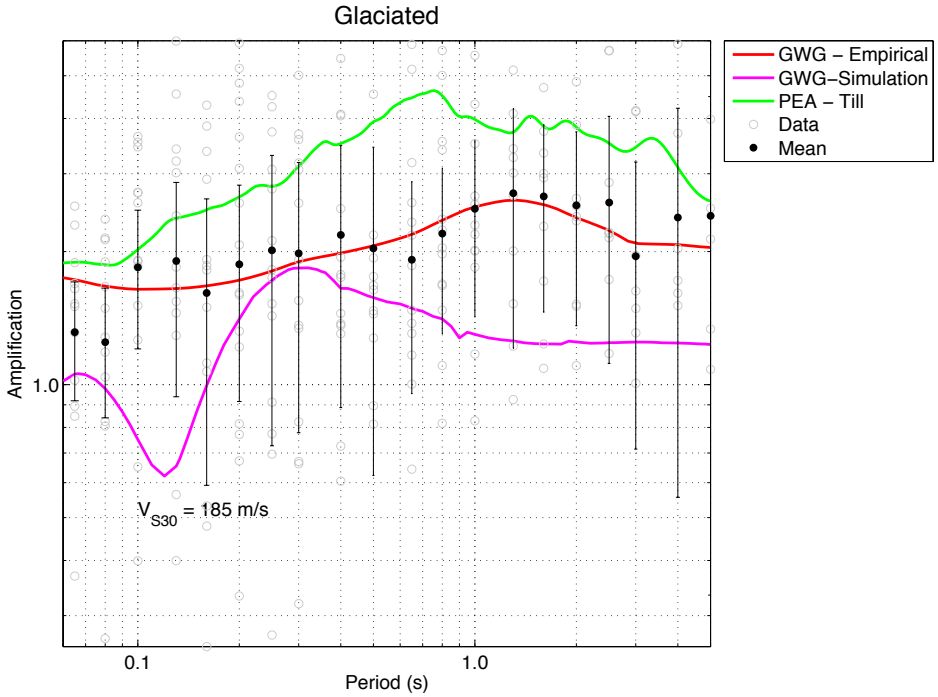


Predicted Amplification in Oscillator Period Space

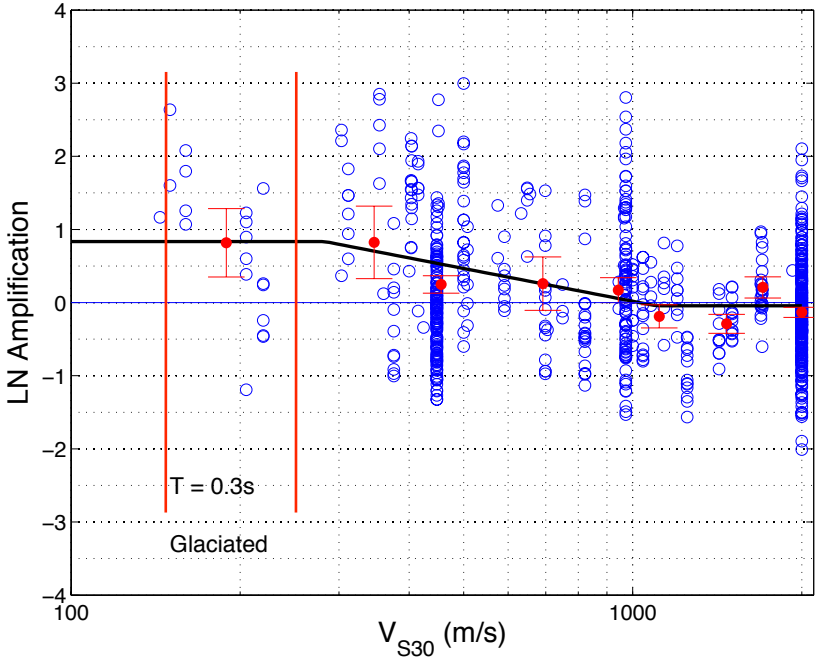
Preparation of Data Points

- Within-event model residuals are used
- Residuals calculated using recordings filtered using same criteria as during model development
- $R = \ln(Y_{ij}) - \mu_{lnIM}(M_i, R_{ij}, 760) - c_k - \eta_i$
  - i ~ event
  - J ~ site
  - Y_{ij} = recording
  - μ_{lnIM} = GMM
  - C_k = model bias
  - $\eta_{i =}$ event term

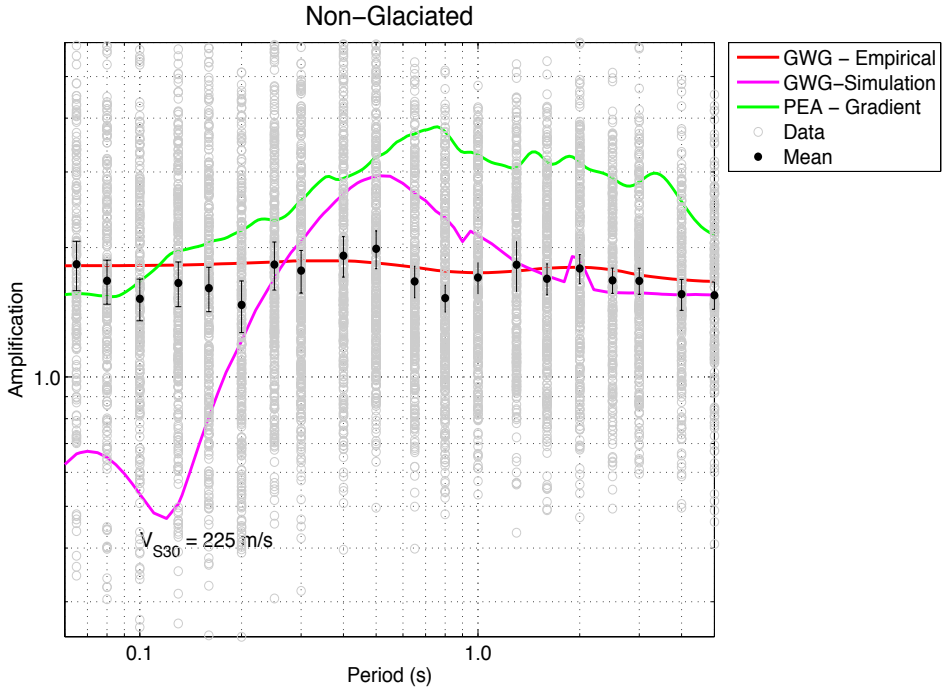
NEHRP D Range V_{S30}



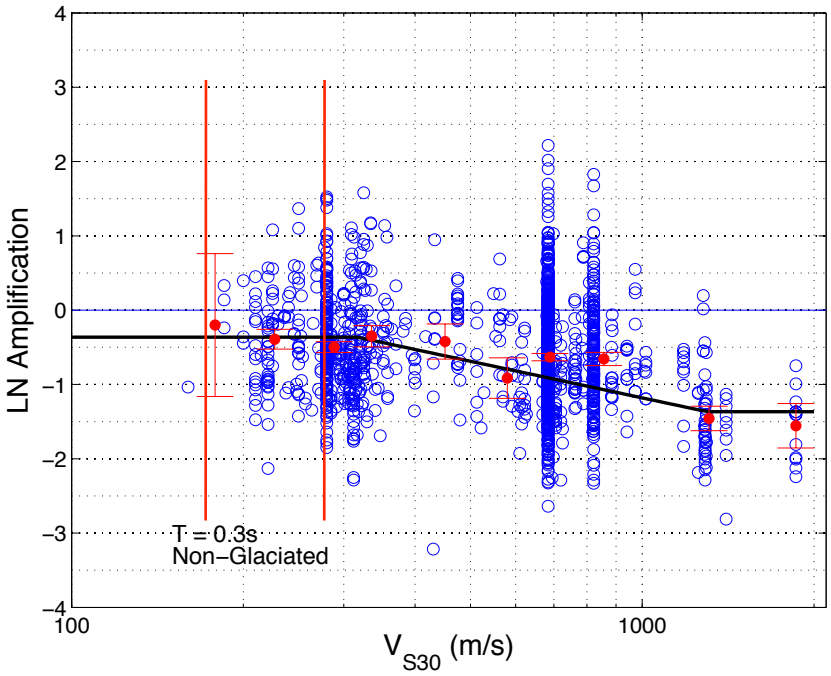
V_{S30} range from 150-230 m/s



NEHRP D Range V_{S30}

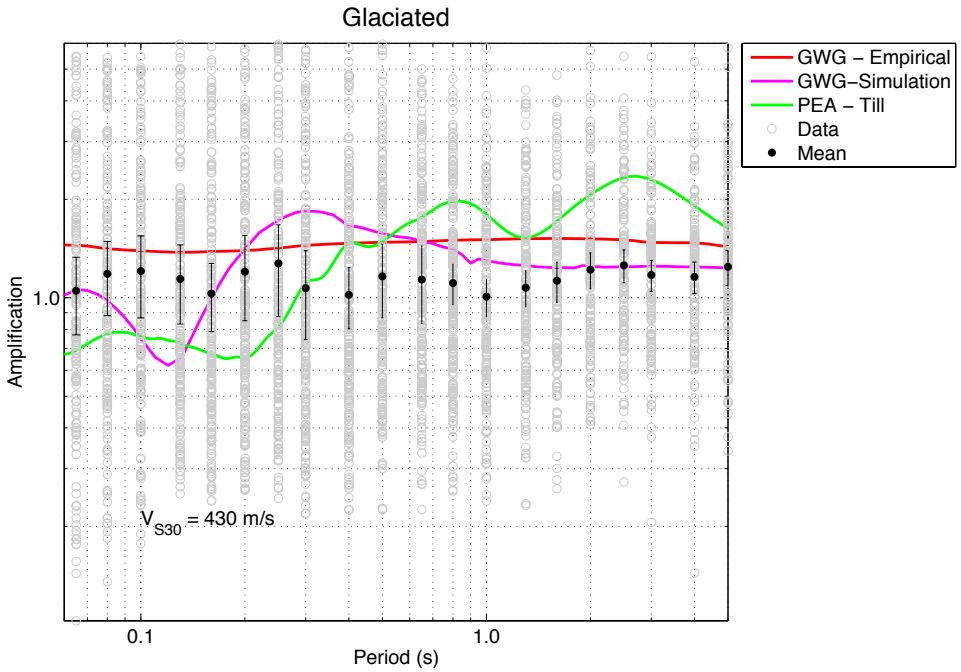


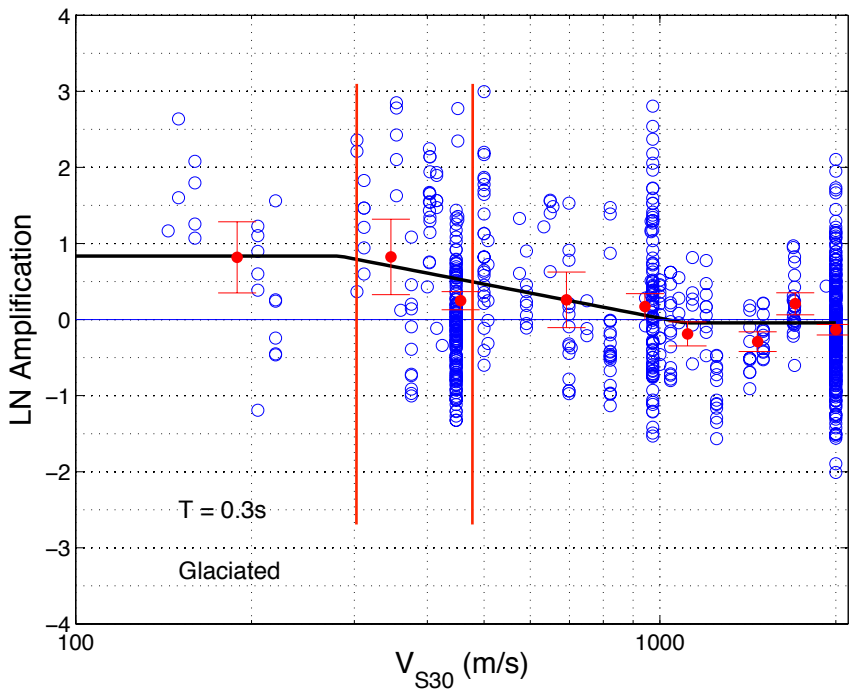
V_{S30} range from 180-280 m/s



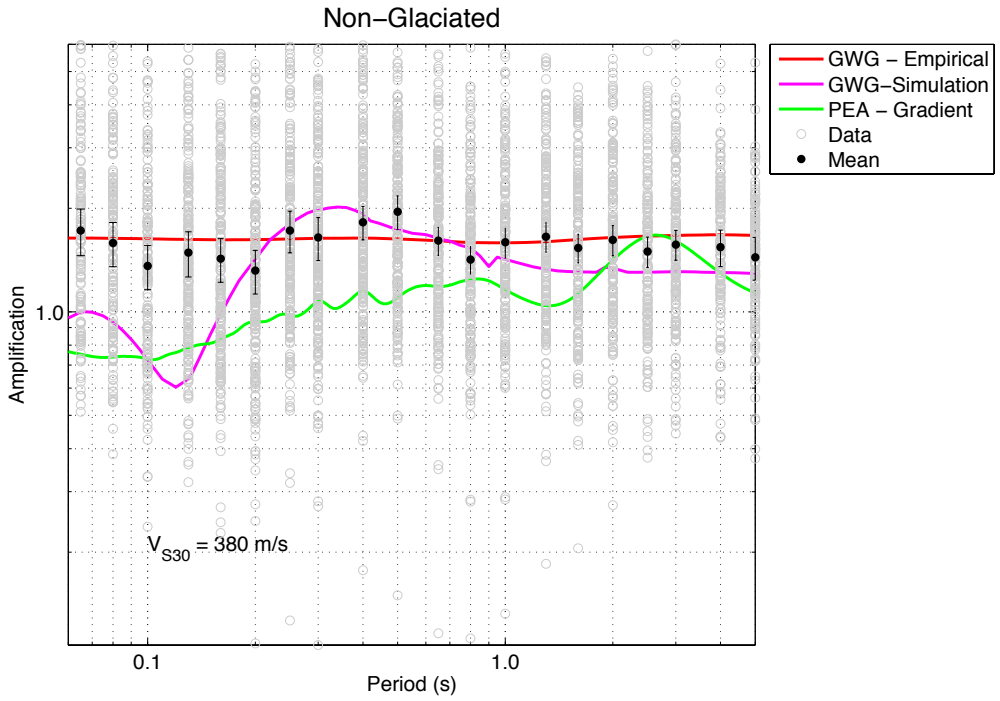
NEHRP C Range V_{S30}

V_{S30} range from 300-480m/s

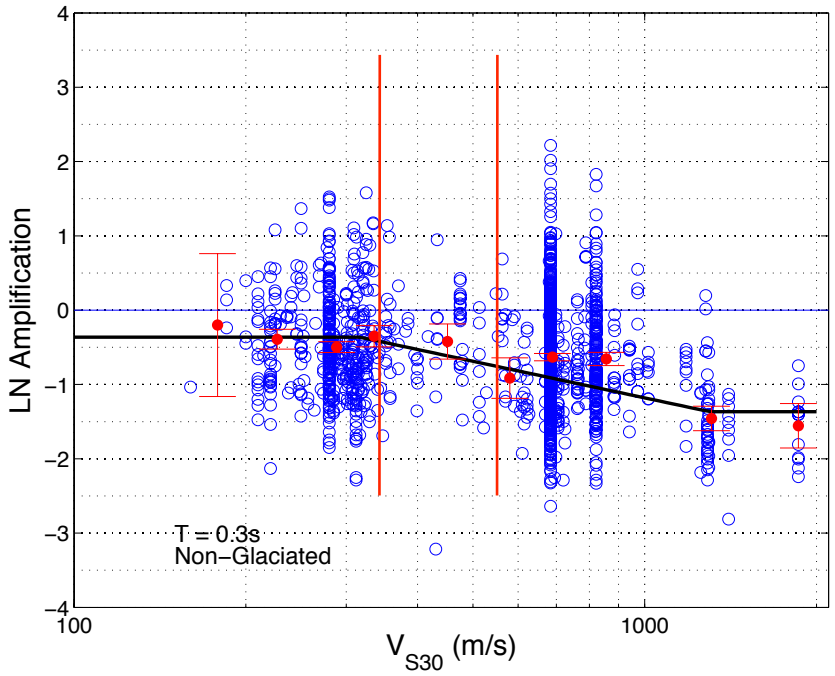




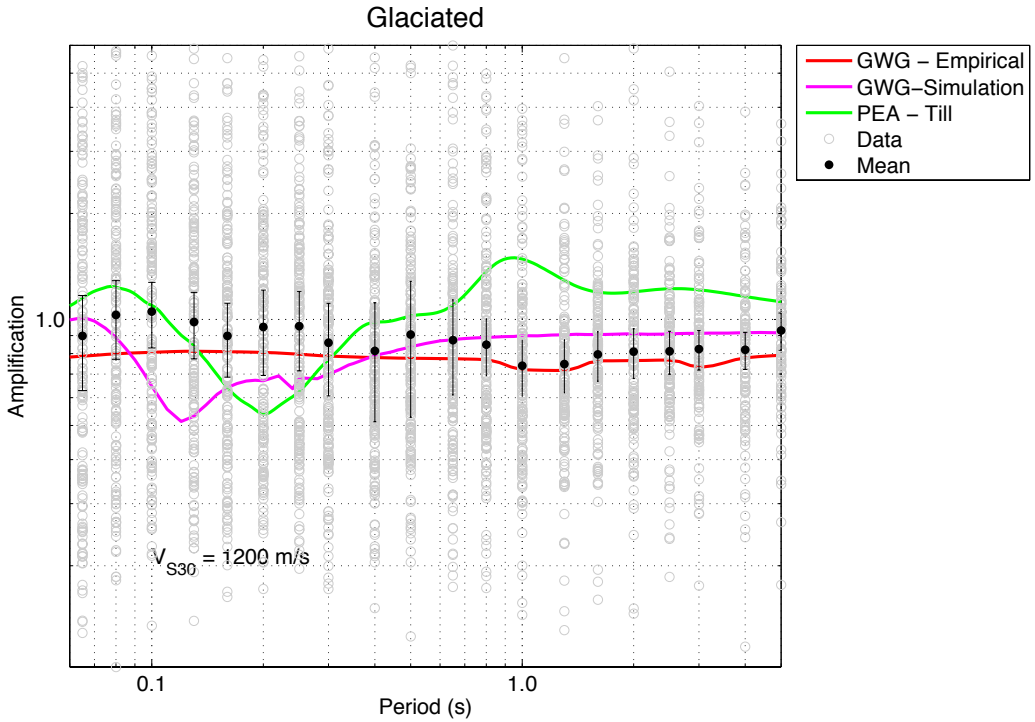
NEHRP C Range V_{S30}



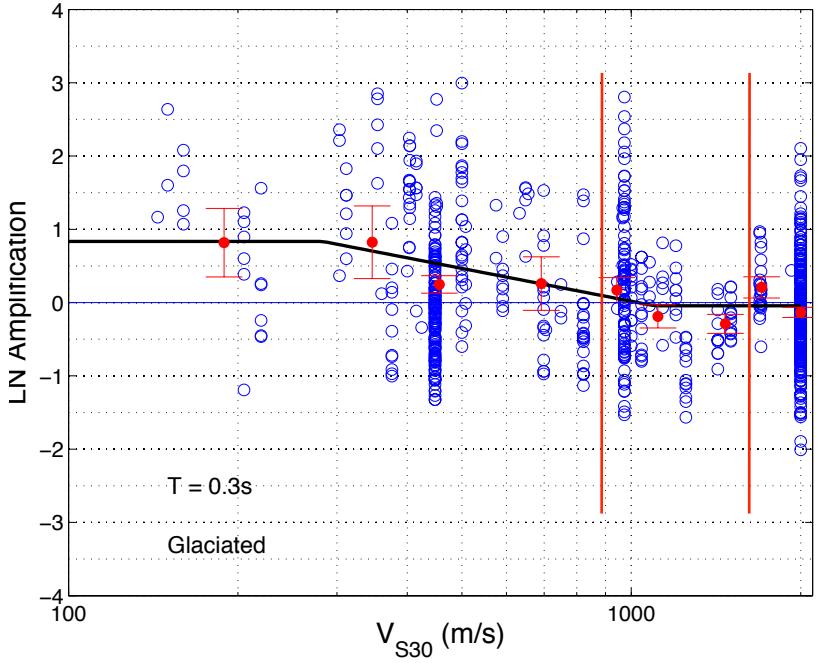
V_{S30} range from 340-550 m/s



NEHRP B Range V_{S30}



V_{S30} range from 900-1600 m/s



NEHRP B Range V_{S30}

V_{S30} range from 975-1700 m/s