Discussion – Do We Have Enough Models to Capture the CBR of the TDI

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Southwestern U.S. Ground Motion Characterization
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Range of GMPE Predictions

• Plots show range of:
  – NGA
  – NGA-West 2
  – NGA-West2 plus epistemic model of Al Atik and Youngs (2013)
  – Other GMPEs

• Shown are:
  – Response spectra for specific scenarios
M 7.0 at $R_{rup} = 10$ km, Strike Slip
M 8.0 at $R_{rup} = 200$ km, Strike Slip
M 6.5 at $R_{rup} = 5$ km, Reverse Slip, Hanging Wall Side
M 6.5 at $R_{rup} = 5$ km, Reverse Slip, Hanging Wall Side, Without Idriss
M 6.5 at $R_{rup} = 15$ km, Normal Slip, Foot Wall Side
M 6.5 at $R_{rup} = 15$ km, Normal Slip, Foot Wall Side, Without Idriss
Magnitude Scaling, Strike Slip, Rx = 10

100 Hz PSA, Rx 10 km, Strike slip
- Range NGA 2008
- Range NGA/W2
- Range NGA2 plus Epistemic
- Akkar et al. (2013)
- Bindi et al. (2011)
- Graizer & Kalkan (2013)
- Zhao et al. (2006)
- Zhao and Lu (2011)

5 Hz PSA, Rx 10 km, Strike slip
- Range NGA 2008
- Range NGA/W2
- Range NGA2 plus Epistemic
- Akkar et al. (2013)
- Bindi et al. (2011)
- Graizer & Kalkan (2013)
- Zhao et al. (2006)
- Zhao and Lu (2011)
Magnitude Scaling, Strike Slip, Rx = 10
(continued)
Distance Scaling, Strike Slip, $M = 7$
Magnitude Scaling, Strike Slip, $M = 7$

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References

Akkar, S., M.A. Sandikkaya, and J.J. Bommer (2013). Empirical ground-motion models for point- and exetneded-source crustal earthquake scenarios in Europe and the Middle East, Bull Earthquake Eng., online publication
Campbell, K.W., and Bozorgnia, Y. (2008). NGA Ground Motion Model for the Geometric Mean Horizontal Component of PGA, PGV, PGD and 5% Damped Linear Elastic Response Spectra for Periods Ranging from 0.01 to 10 s, Earthquake Spectra. 24, 139-171.