Hazard Sensitivity

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DCPP SSC Workshop 3: March 25, 2014

Overview

- GMPEs
- SSC Models
- Sensitivity Analysis
- Tornado Plots

DCPP: GMPEs

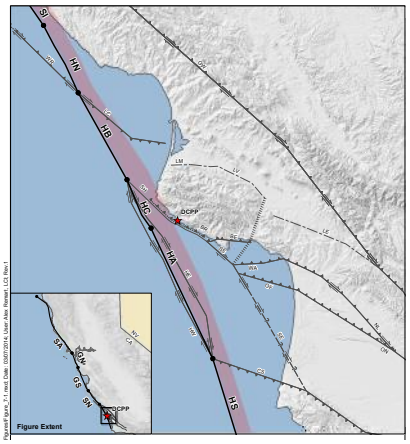
- ASK (2014)
- BSSA (2014)
- CB (2014)
- CY (2014)
- ASB (2013)
- Vs30m=760m/s
- Default Z1 and Z25 values
- Ergodic Sigma
- Equally Weighted

DCPP: SSC

- Outward-vergent (Inward Dipping)
  - OV [wt=0.4]
- Southwest-vergent (Main reverse faults dip NE)
  - SW [wt=0.3]
- Northeast-vergent (Main reverse faults dip SW)
  - NE [wt=0.3]

- Shoreline (2011)

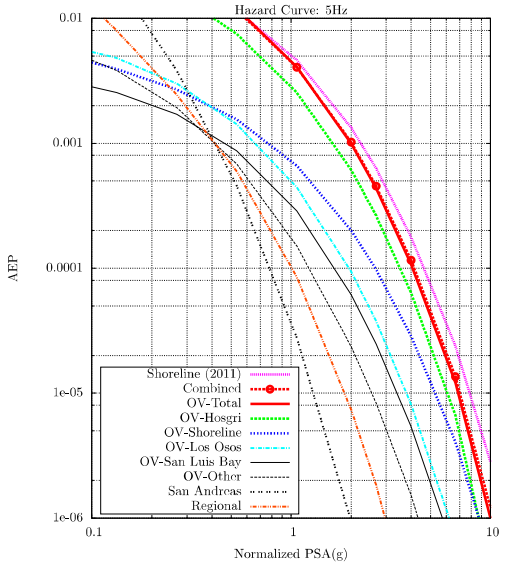
DCPP: SW-01 Fault



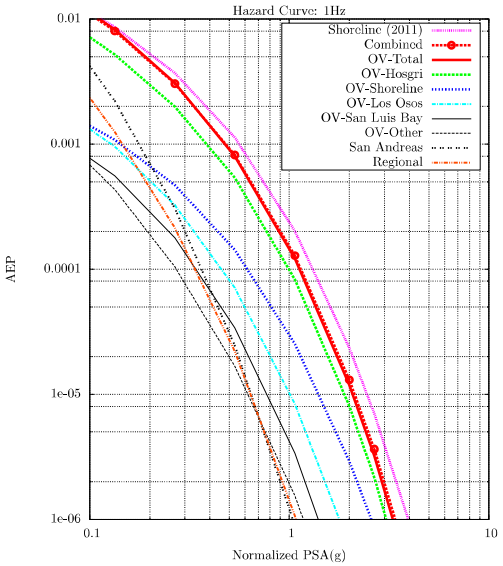
DCPP: Sensitivity Cases

- Recurrence (Time Dependence)
- Hosgri Fault Slip Rate
- Characteristic Maximum Magnitude
- Shoreline Fault Slip Rate
- Hosgri Fault Dip
- Tectonic SSC Models
- Los Osos Fault Slip Rate
- San Luis Bay (SLB) Fault Slip Rate
- Other Faults Slip Rate (Oceano, Wilmar Avenue, . . .)
- Maximum Magnitude (GR Model)
- San Andreas Fault
- Regional Fault
- WAACY
- Background Seismicity Zone

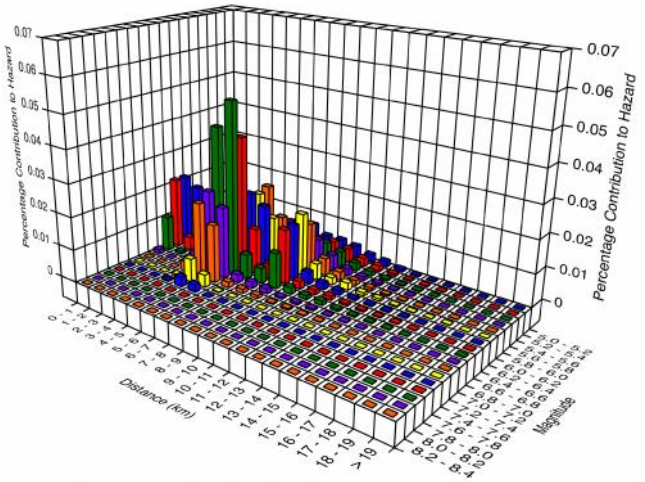
DCPP: 5 Hz by Fault Sources



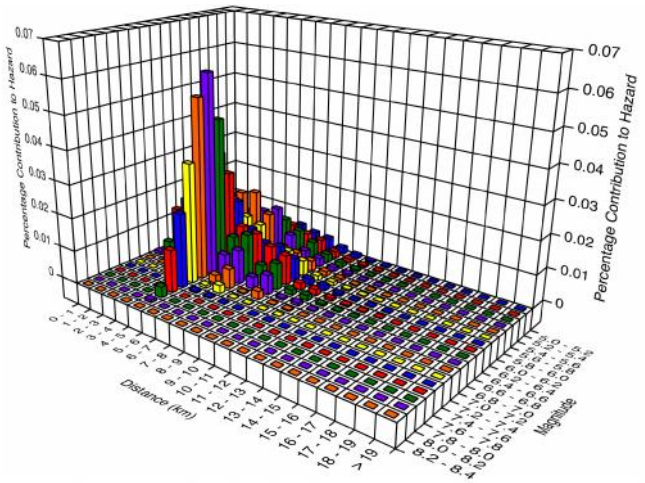
DCPP: 1 Hz by Fault Sources



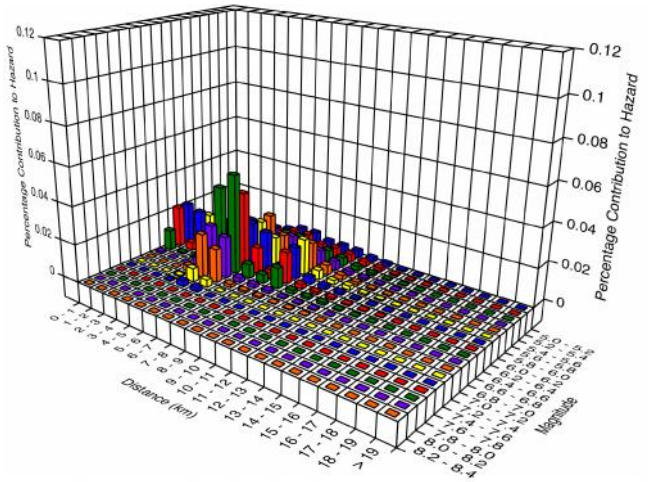
DCPP: OV, 5 Hz, (10-4) Deaggregation



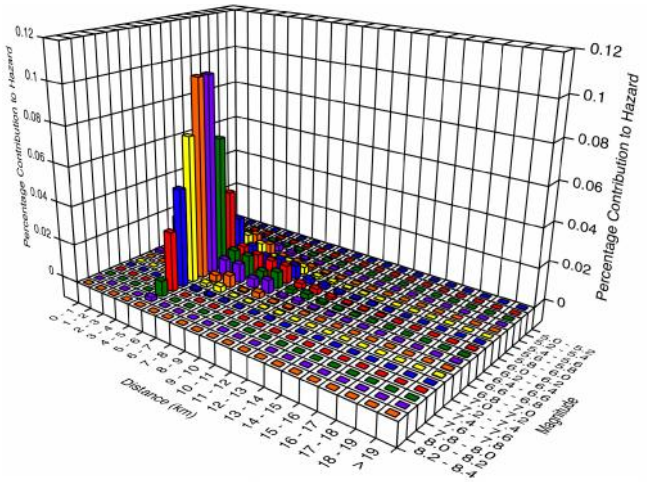
DCPP: Shoreline (2011), 5 Hz, (10-4) Deaggregation



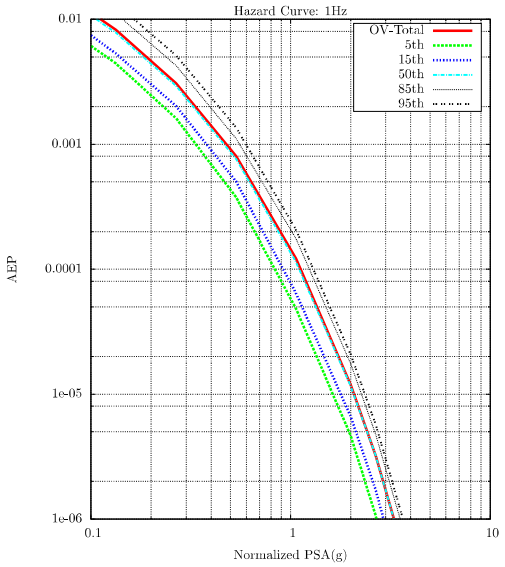
DCPP: OV, 1 Hz, (10-4) Deaggregation



DCPP: Shoreline (2011), 1 Hz, (10-4) Deaggregation



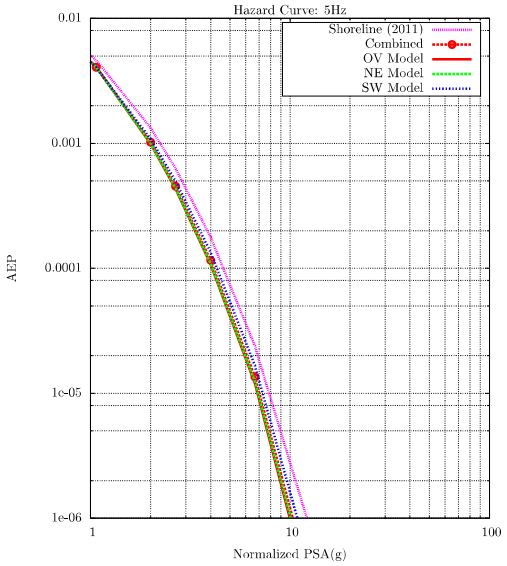
DCPP: Fractile (OV, 1 Hz)



DCPP: Tectonic Models

- OV [0.40]
- SW [0.30]
- NE [0.30]

- Shoreline (2011)



DCPP: Tectonic Models

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- SW [0.30]
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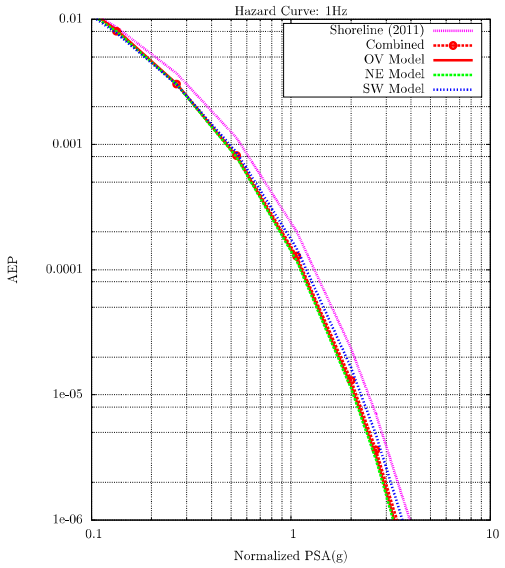
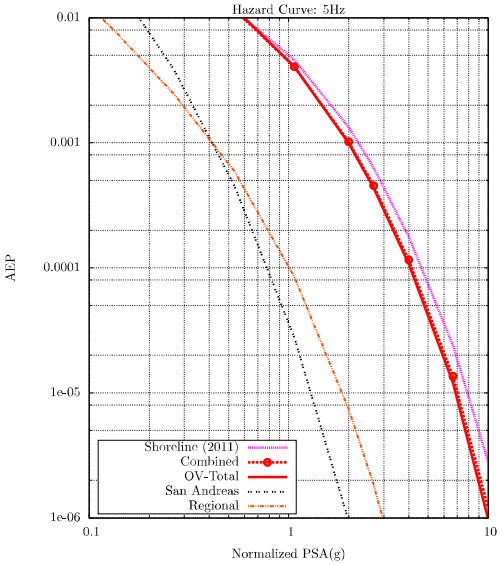


DCPP: Additional Faults

- San Andreas Fault
- Regional Faults



DCPP: Additional Faults

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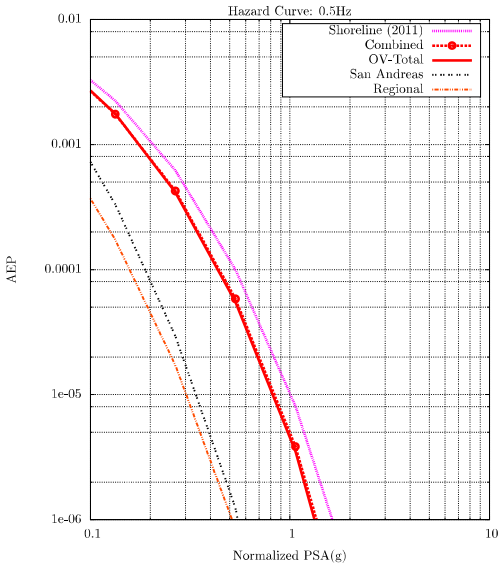
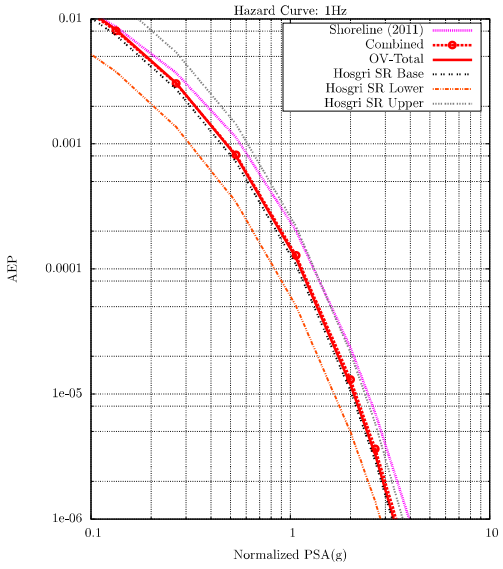


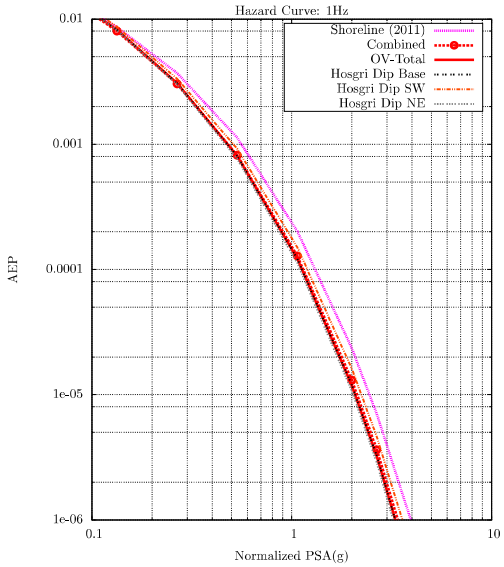
DCPP: Hosgri Slip Rate

- Base, Lower, Upper Slip Rates



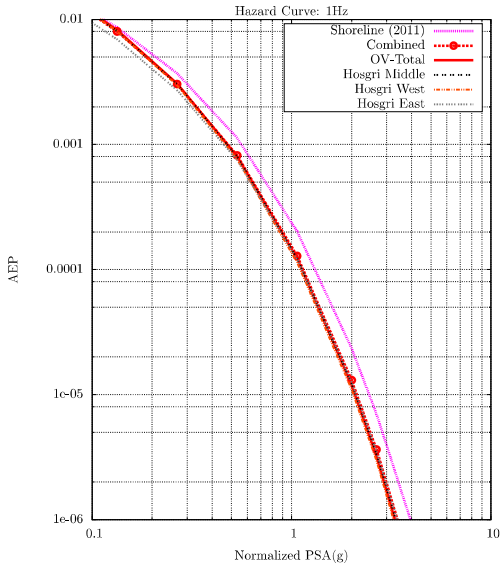
DCPP: Hosgri Dip

- Base, SW, NE



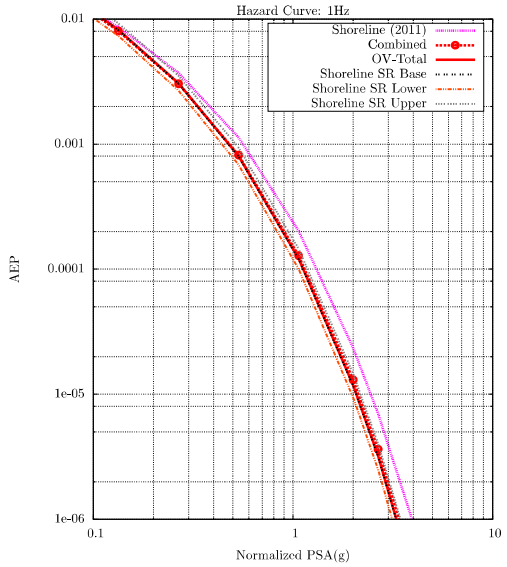
DCPP: Hosgri Location

- Middle, West, East



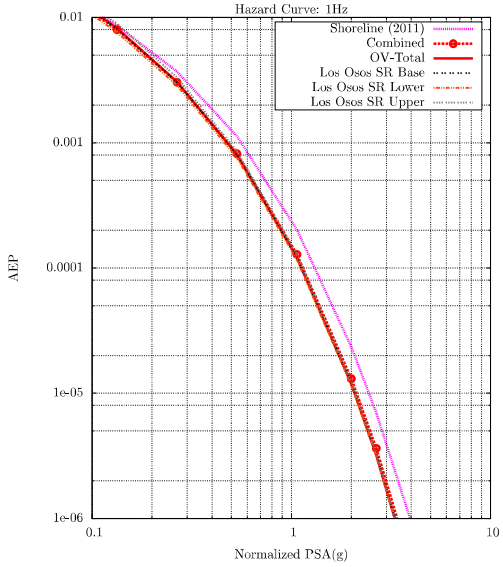
DCPP: Shoreline Fault Slip Rate

- Base, Lower, Upper



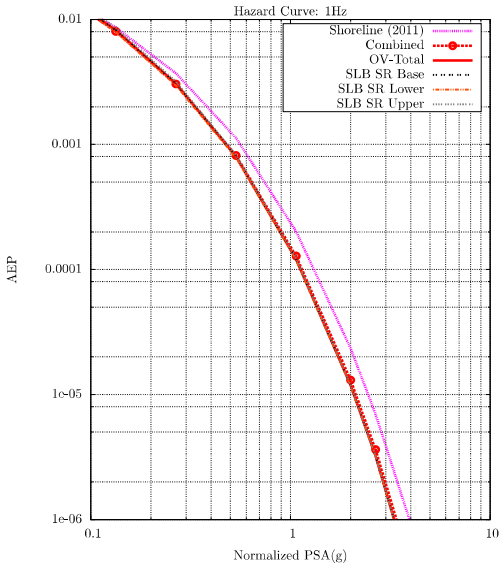
DCPP: Los Osos Fault Slip Rate

- Base, Lower, Upper



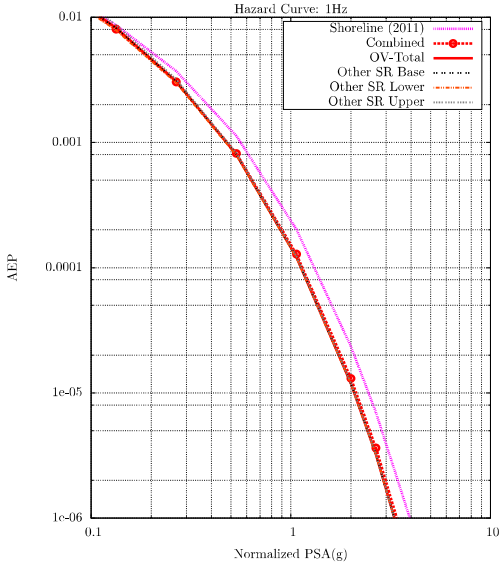
DCPP: SLB Fault Slip Rate

- Base, Lower, Upper



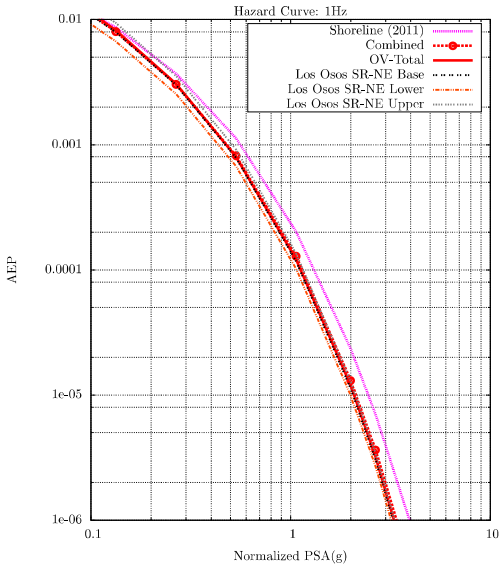
DCPP: Other Faults Slip Rate

- Base, Lower, Upper



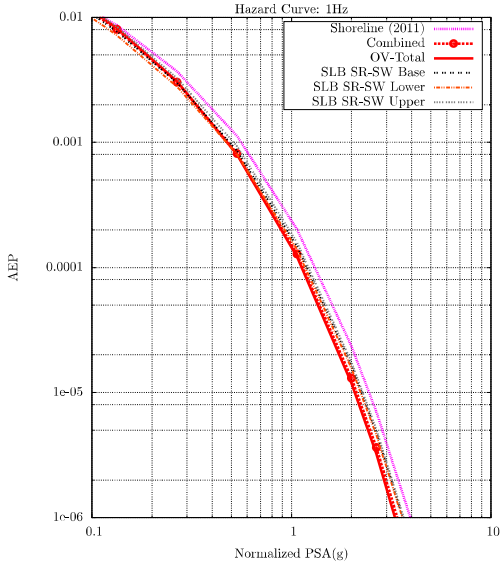
DCPP: Los Osos Slip Rate (NE)

- Base, Lower, Upper (Range of NE Model)



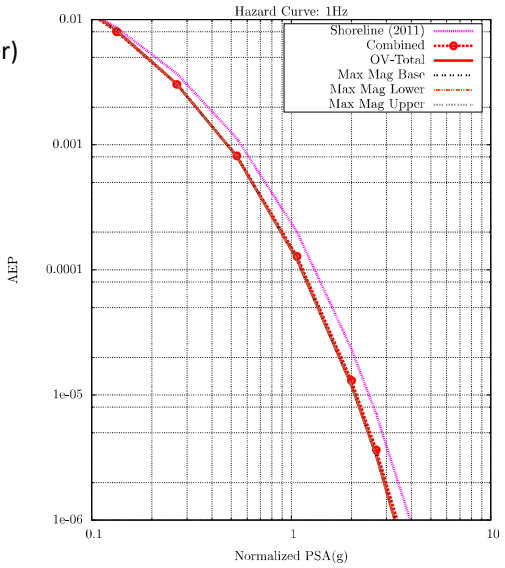
DCPP: SLB Slip Rate (SW)

- Base, Lower, Upper (Range of SW Model)



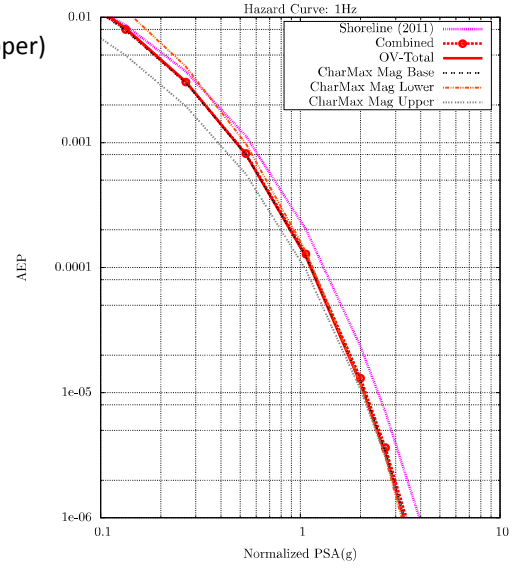
DCPP: Maximum Magnitude

- Max Mag (Base, Lower, Upper)



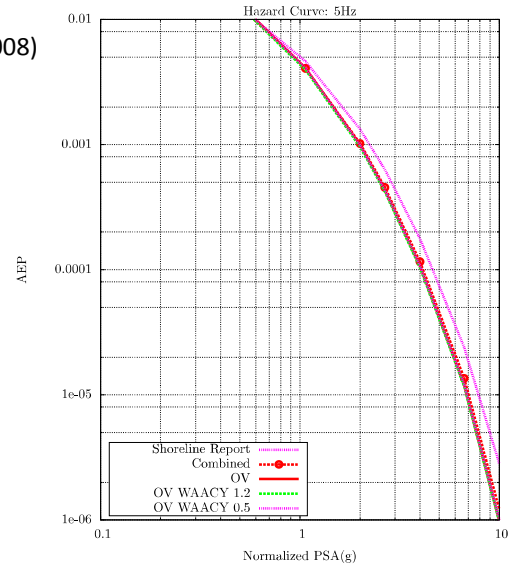
DCPP: Characteristic Maximum Magnitude

- Char Mag (Base, Lower, Upper)

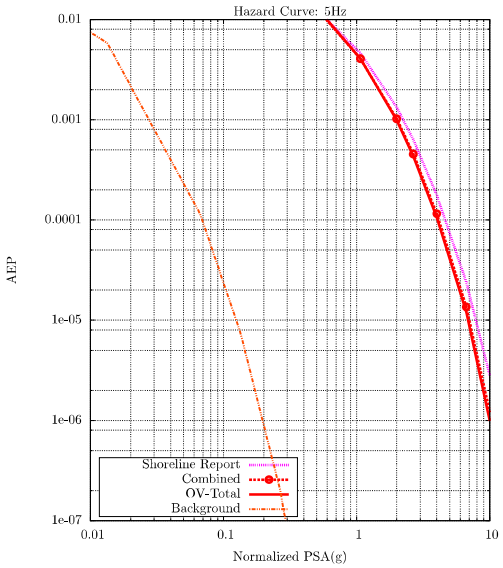


DCPP: WAACY Model

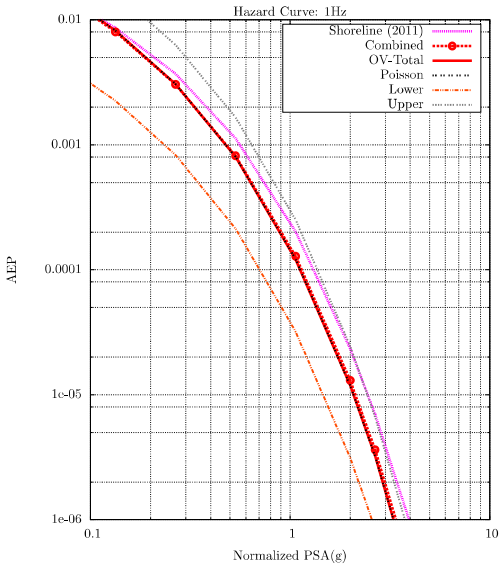
- Btail=1.2, 0.5 (Wesnousky, 2008)



DCPP: Background



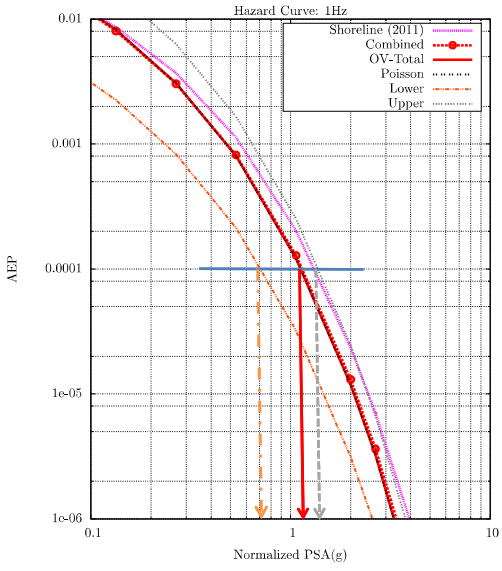
DCPP: Recurrence (Time Dependent)



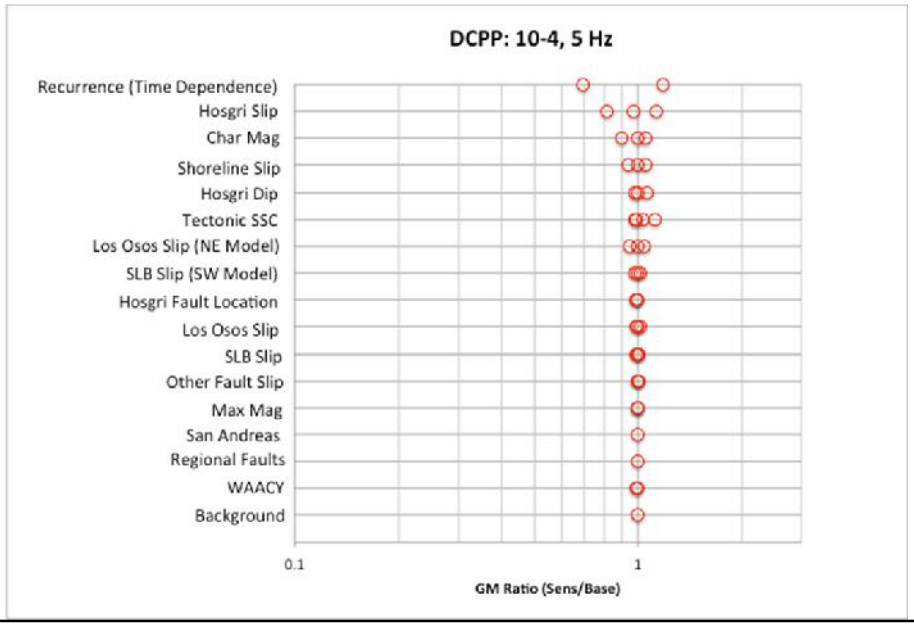
DCPP: Tornado Plot Ratios

GM Ratio = $GM_{upper}/GM_{Poisson}$

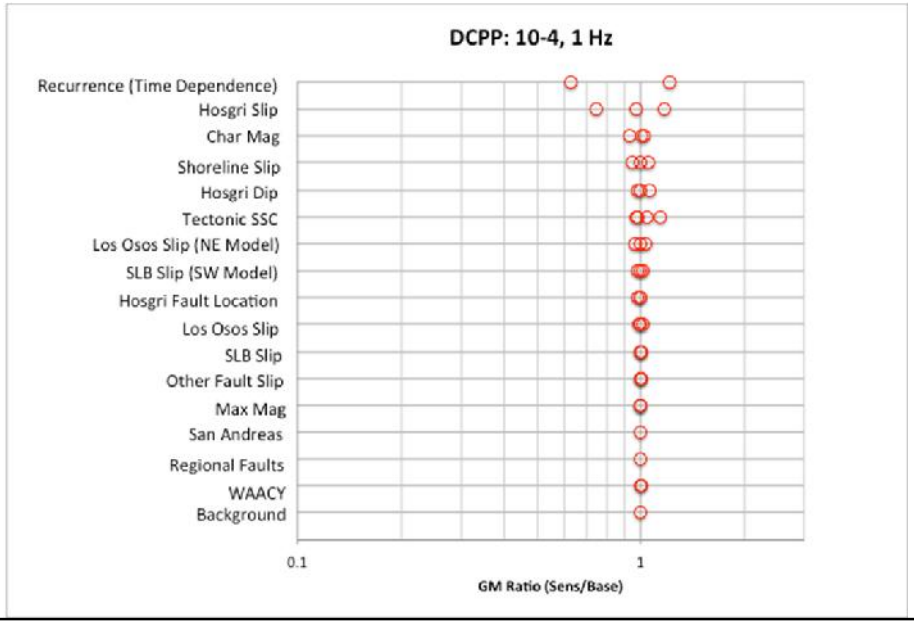
GM Ratio = $GM_{lower}/GM_{Poisson}$



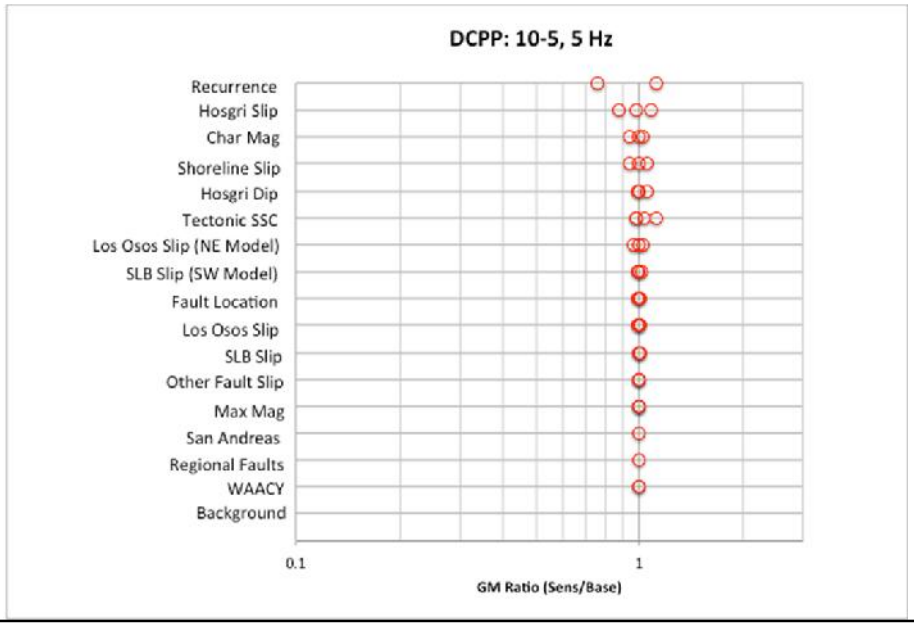
DCPP: Tornado 5 Hz (10^{-4})



DCPP: Tornado 1Hz (10^{-4})



DCPP: Tornado 5 Hz (10^{-5})



DCPP: Tornado 1Hz (10^{-5})