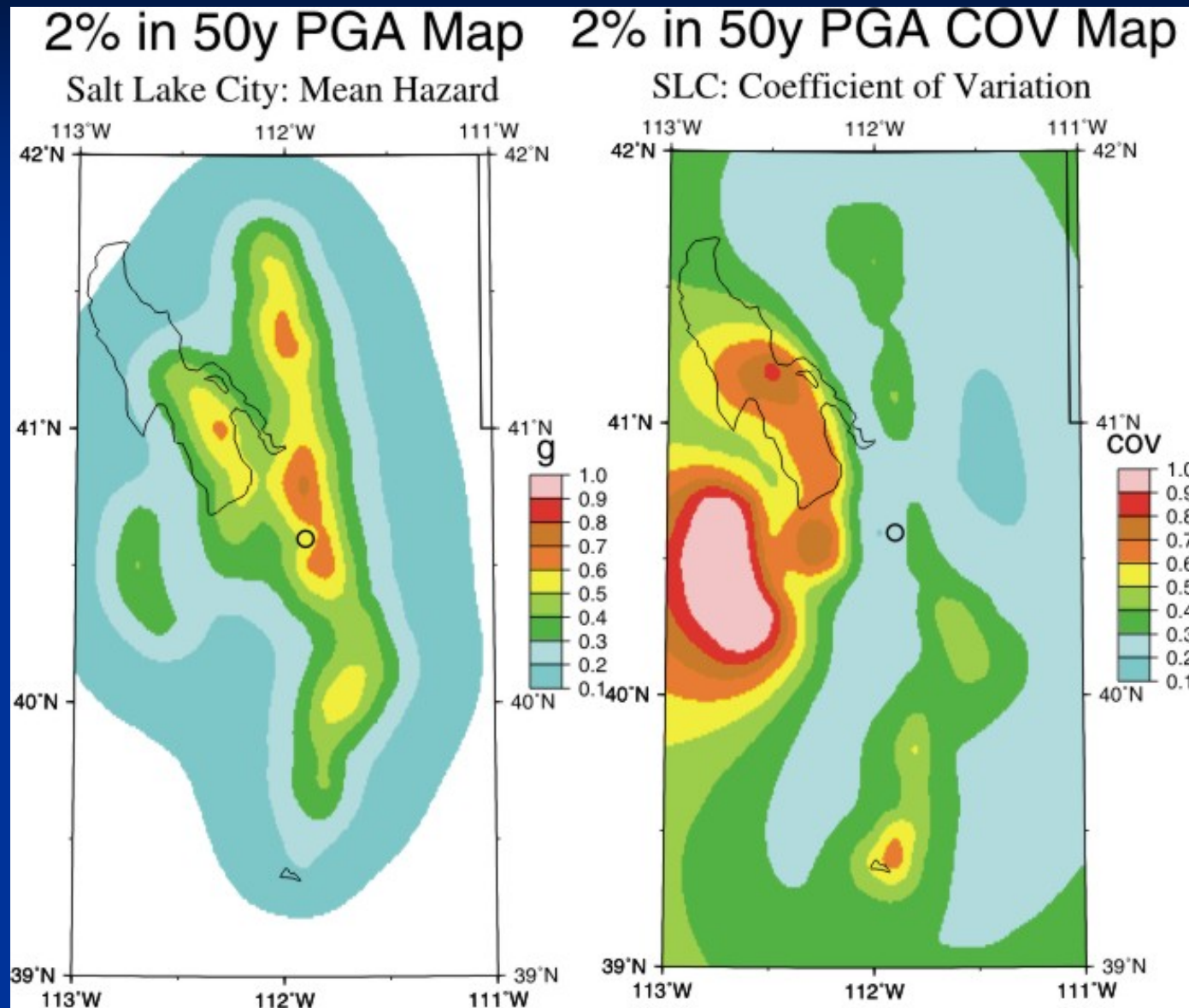


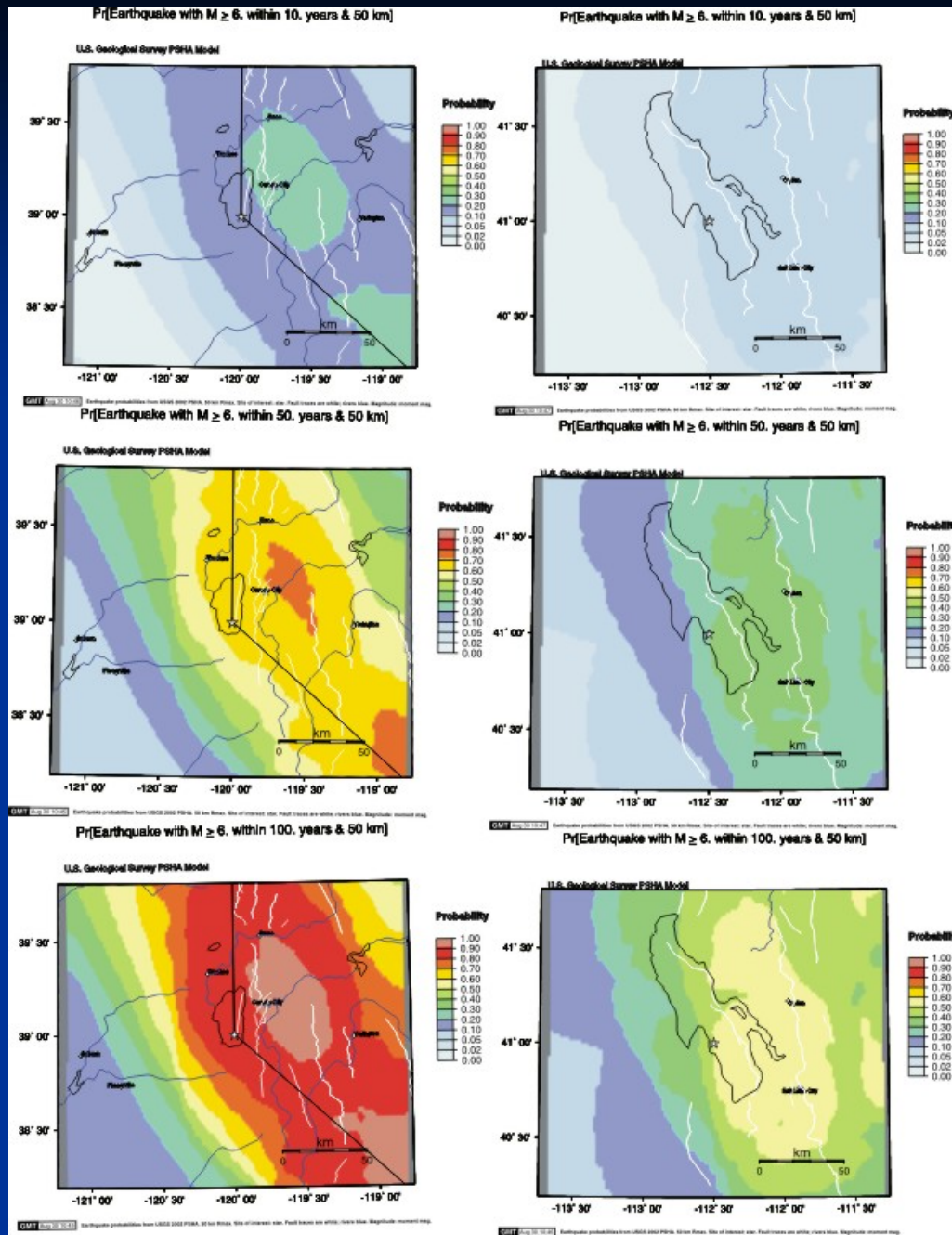
PRODUCTS AND TESTS

Testing and Uncertainty Analysis

UNCERTAINTY ANALYSIS

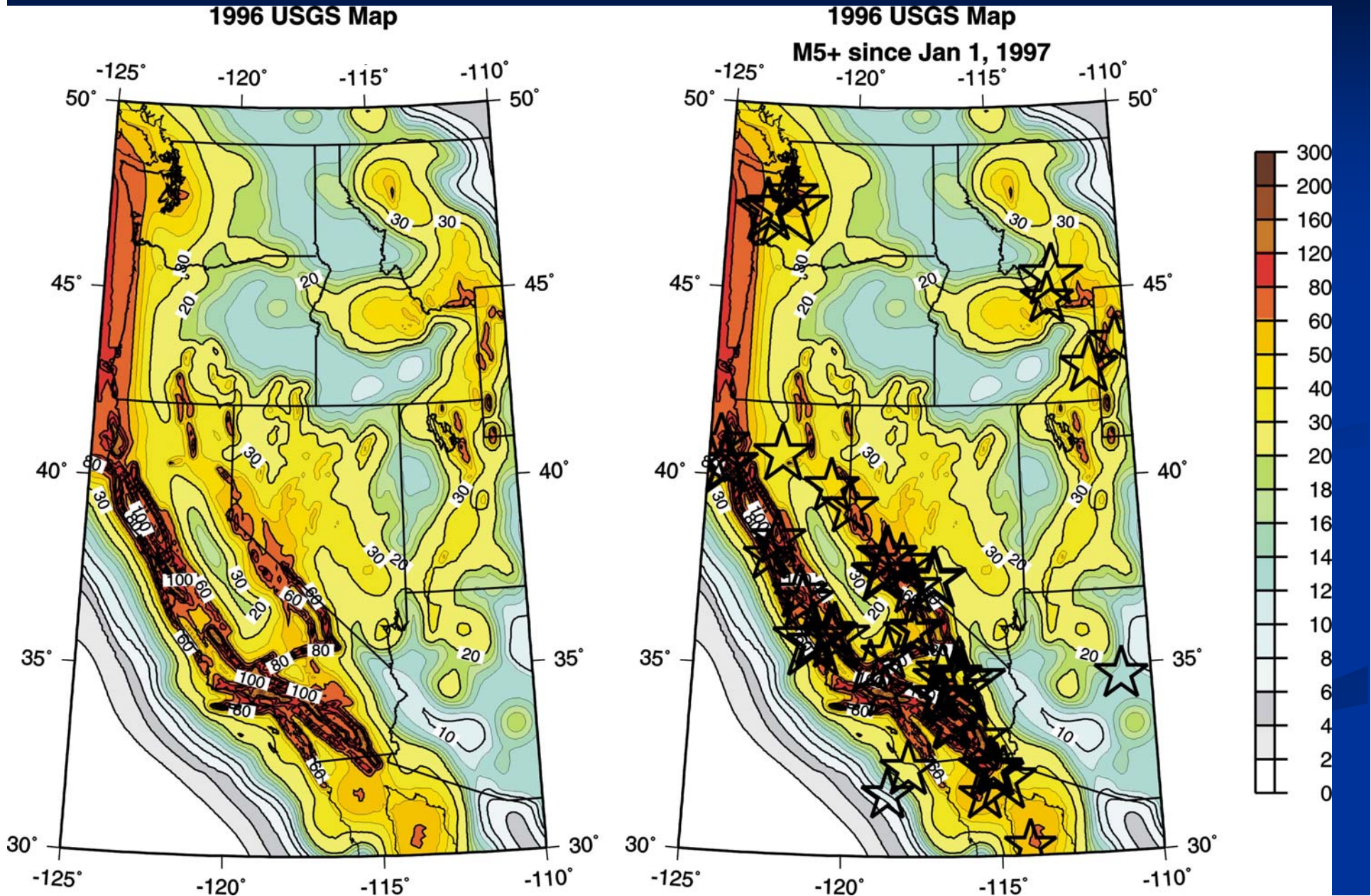


Probability maps

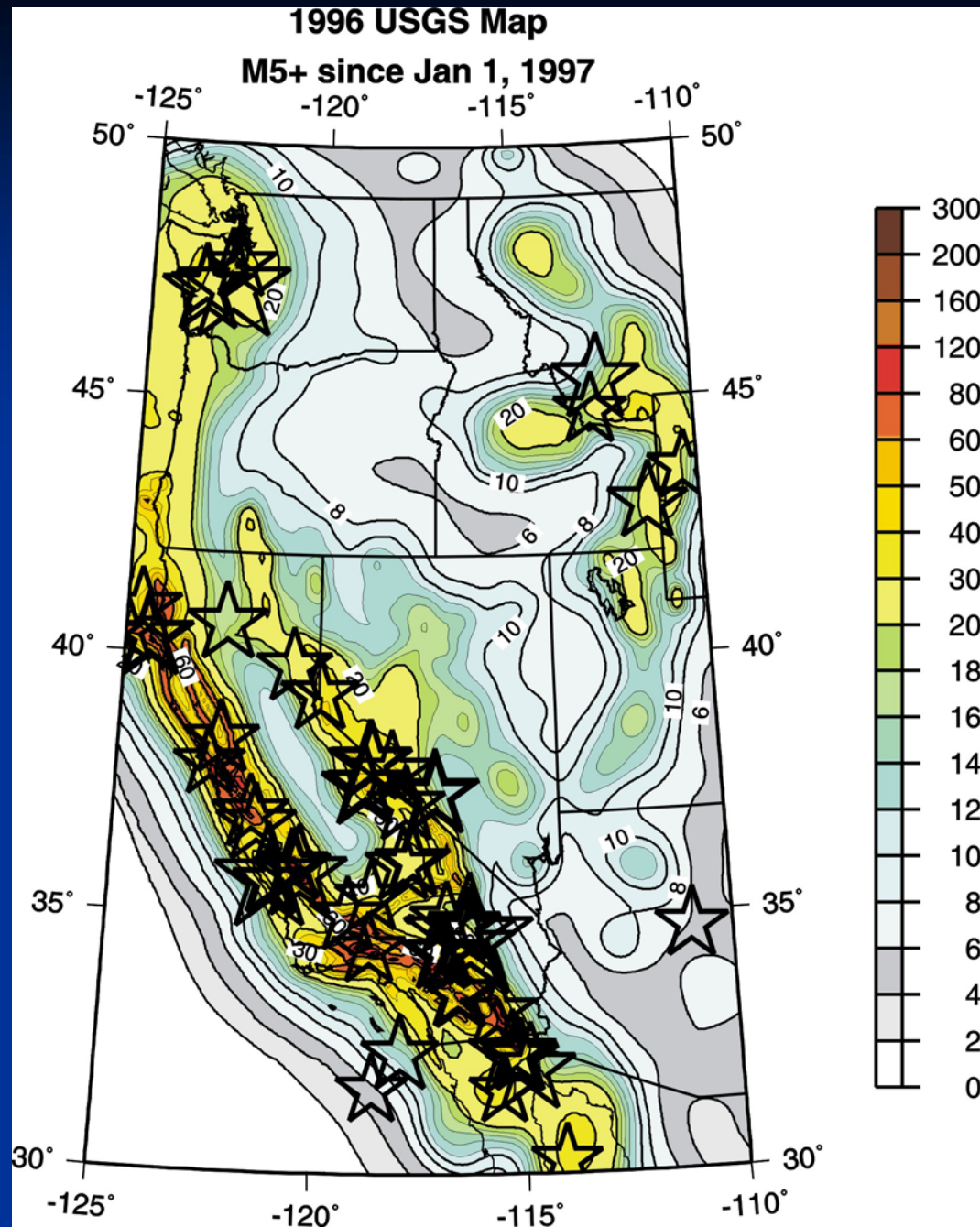


PGA (%g) with
2% PE in 50 yr

62 events

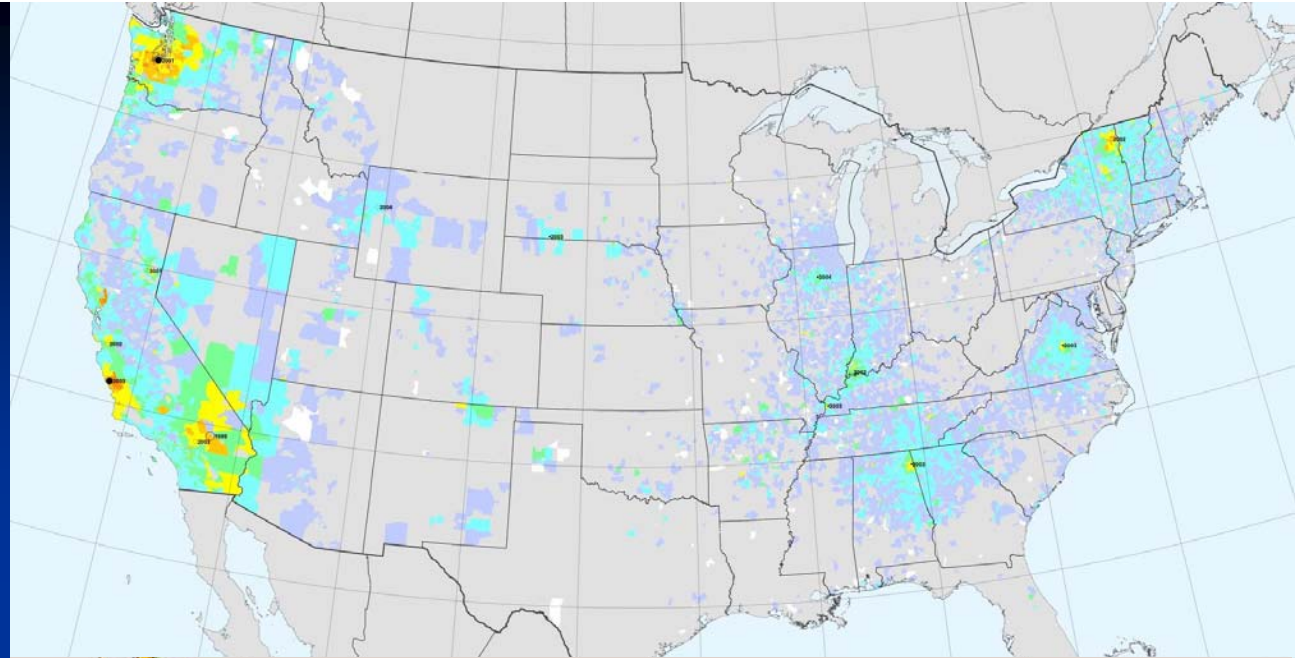


PGA (%g)
With 10% PE
In 50 years



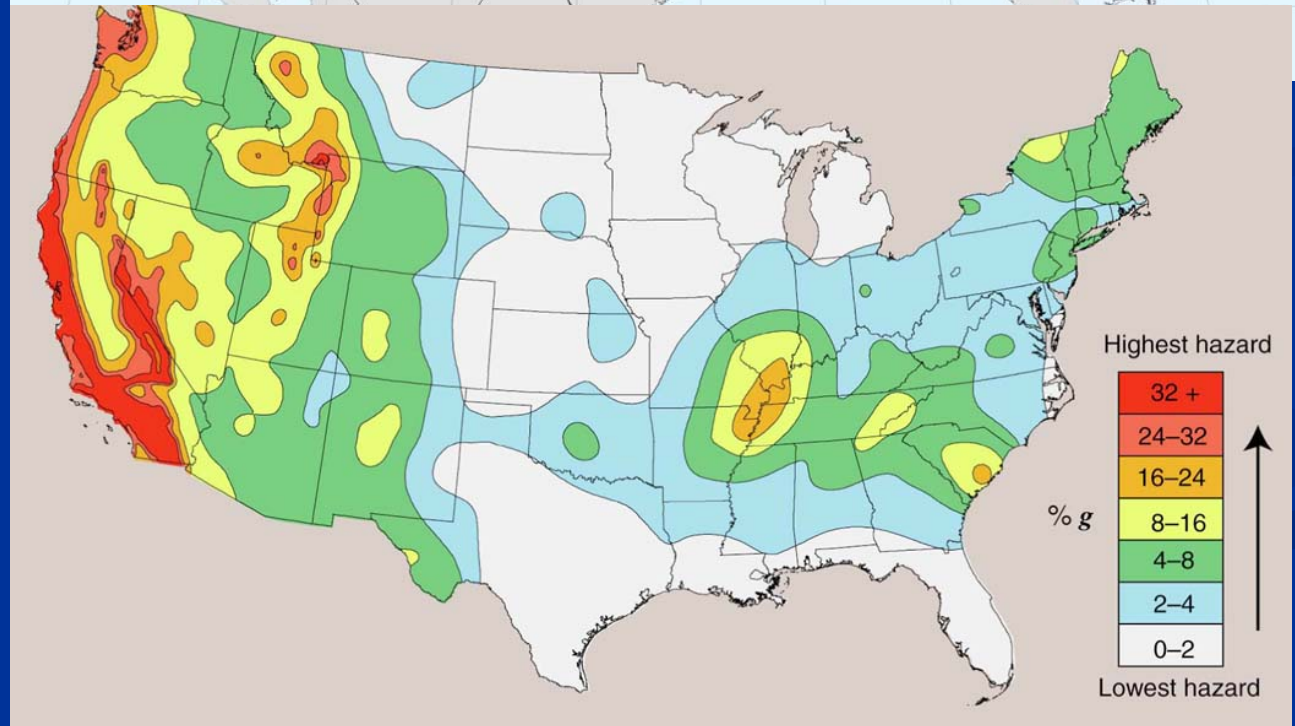
DID YOU FEEL IT?

5 Years



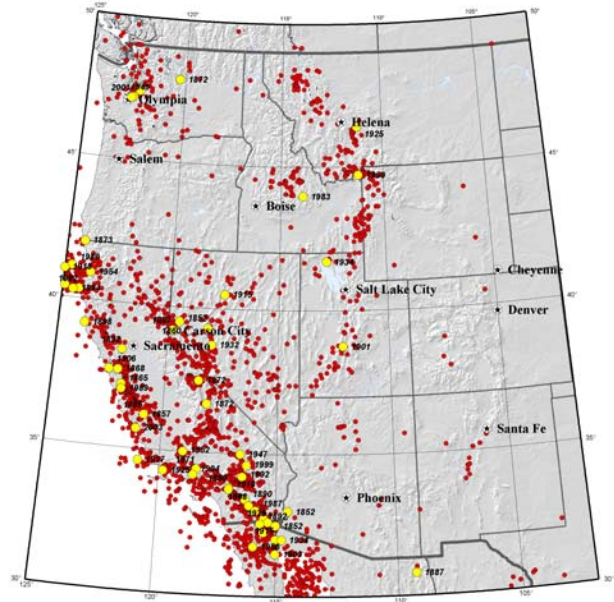
USGS HAZARD MAP

10% probability
Of exceedance in
50 years

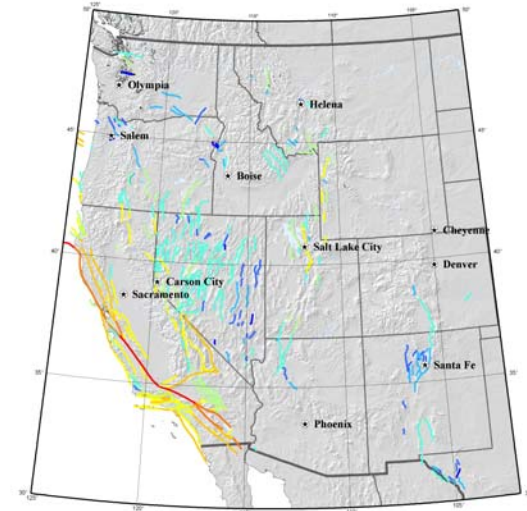


DATA FOR DEVELOPING MAPS:

EARTHQUAKES

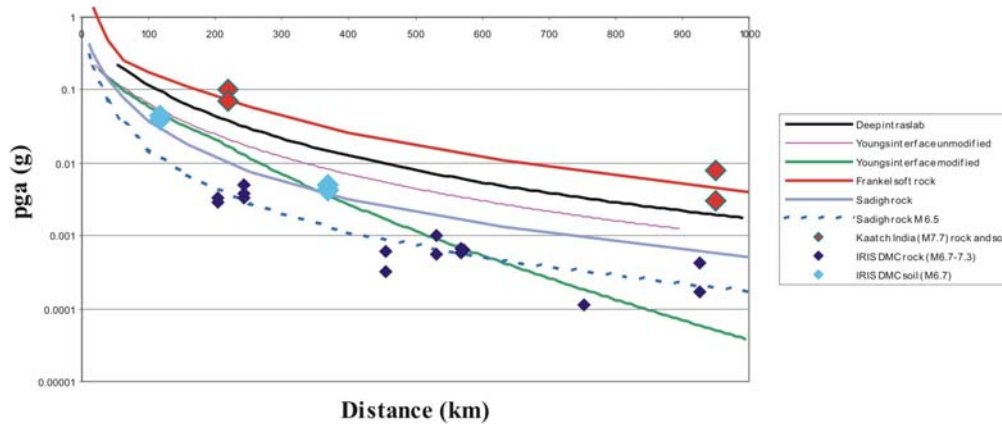


QUATERNARY FAULTS



ATTENUATION RELATIONS

M 7.5 comparison of attenuation relations

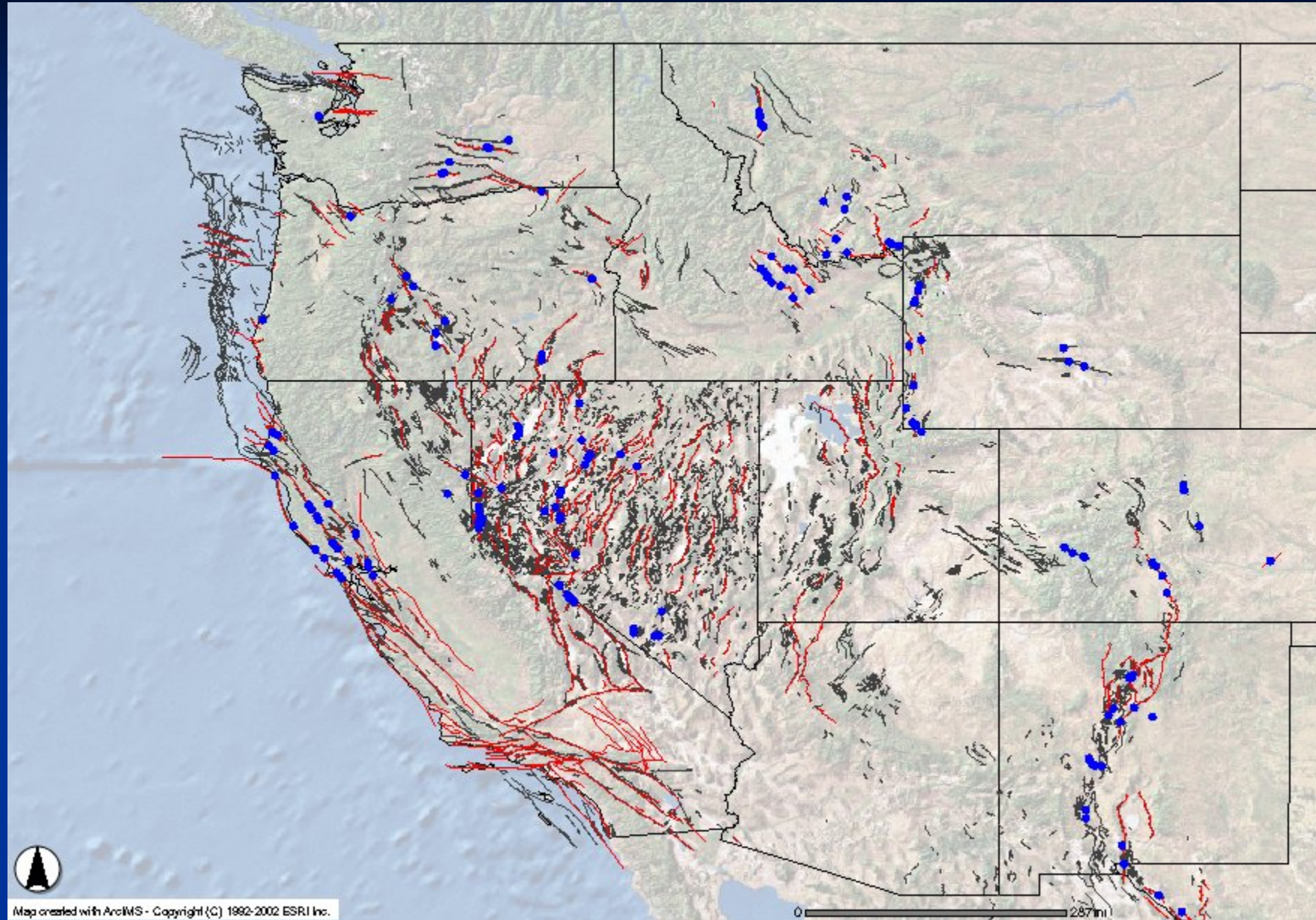


GEODETTIC DATA



Blue sites surveyed once in 1999 and will be surveyed again June 2003.
 Cyan sites surveyed once in 2001, expecting resurvey in 2005.
 Magenta sites surveyed once in 2000, expecting resurvey in 2004.
 Red sites have been described and sited, expecting first survey in September 2003.

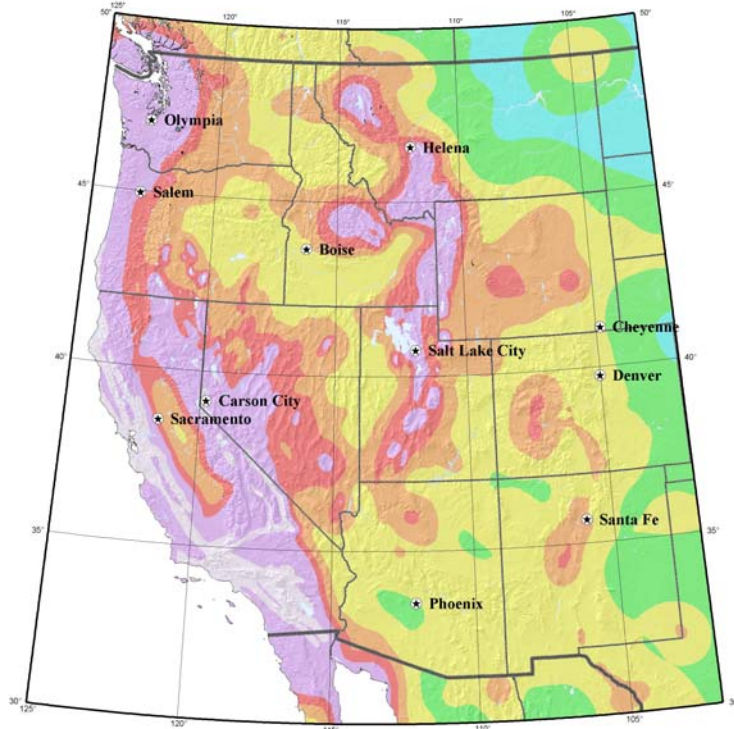
Quaternary Fault – Consensus Fault Database /ARCIMS interface



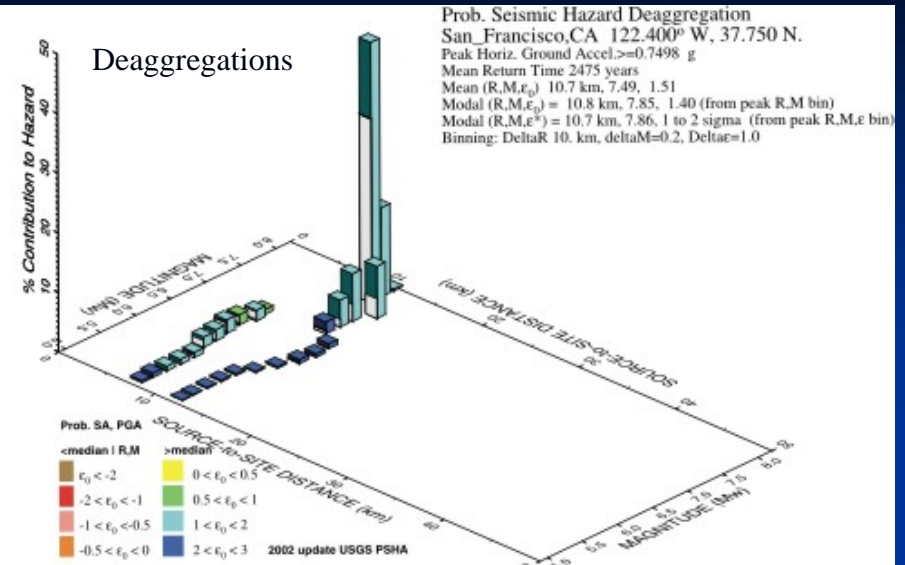
HAZARD PRODUCTS

<http://eqhazmaps.usgs.gov>

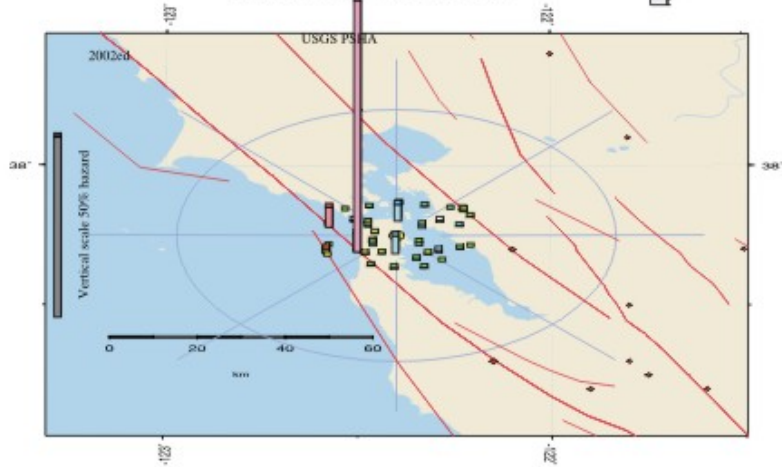
2002 Hazard Maps - PGA-rock
2% probability of exceedance in 50-years



Purple-0.3g and greater
Yellow -0.1g and greater

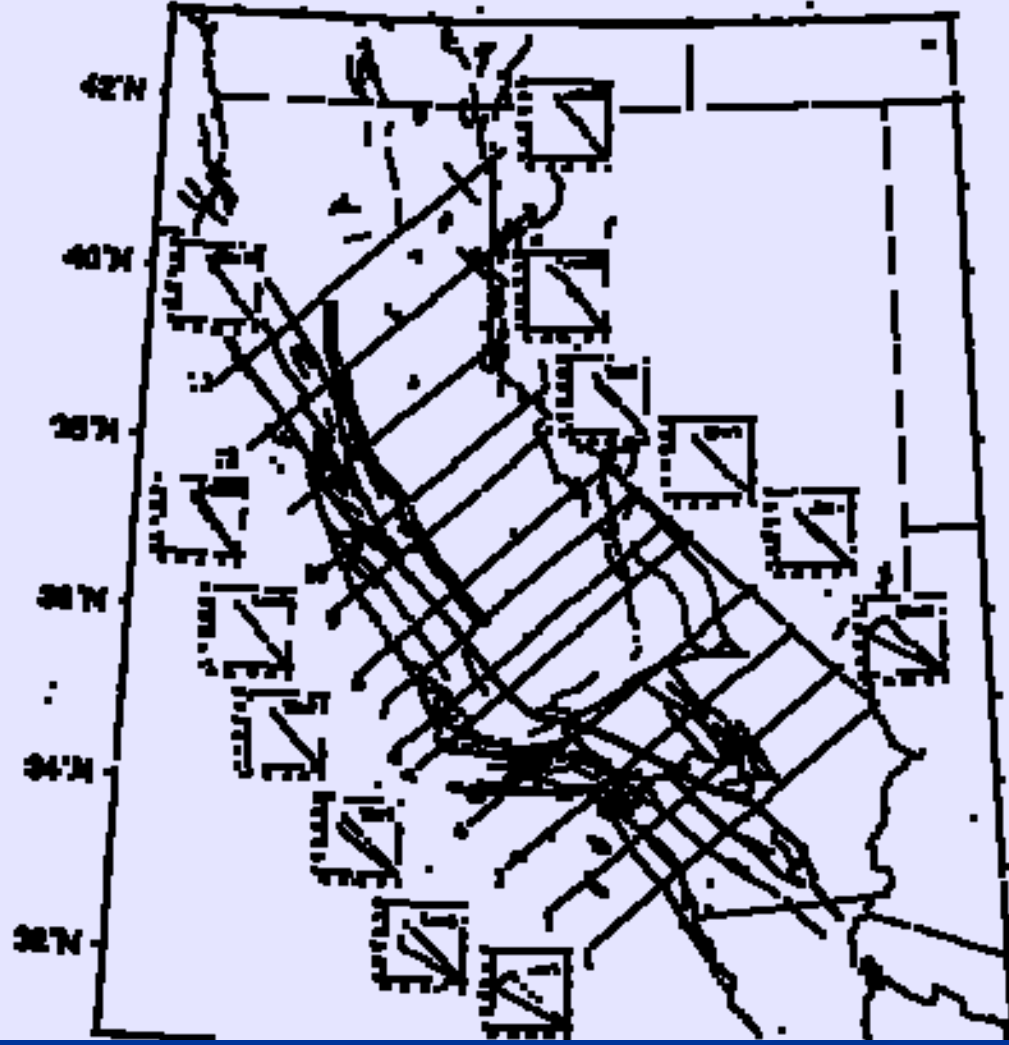


San_Francisco,CA Geographic Deagg. Seismic Hazard
for 0.00-s Spectral Accel, 0.7498 g
PGA Exceedance Return Time: 2475 years
Max. significant source distance: 19. km.
Red lines represent Quaternary fault locations
Gridded-source hazard accum. in 5° intervals
Rock site. Average Vs=760 m/s top 30 m



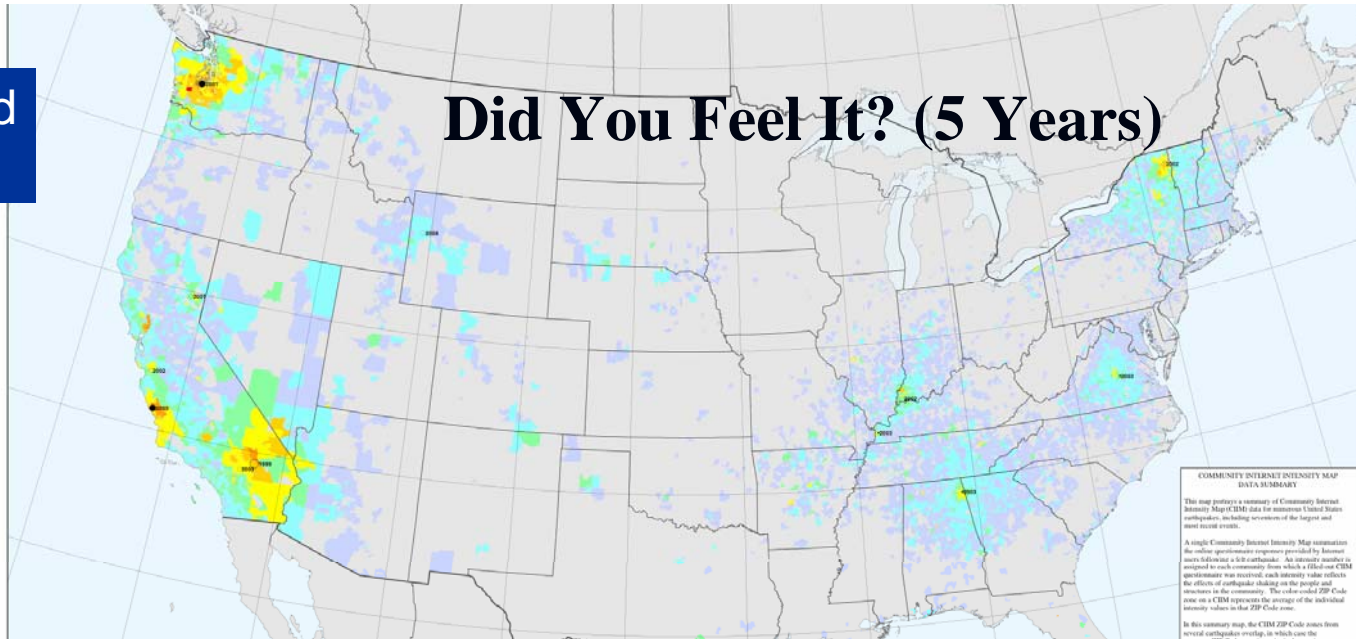


DEPARTMENT OF
CONSTRUCTION
BUREAU OF
HIGHWAYS AND BRIDGES

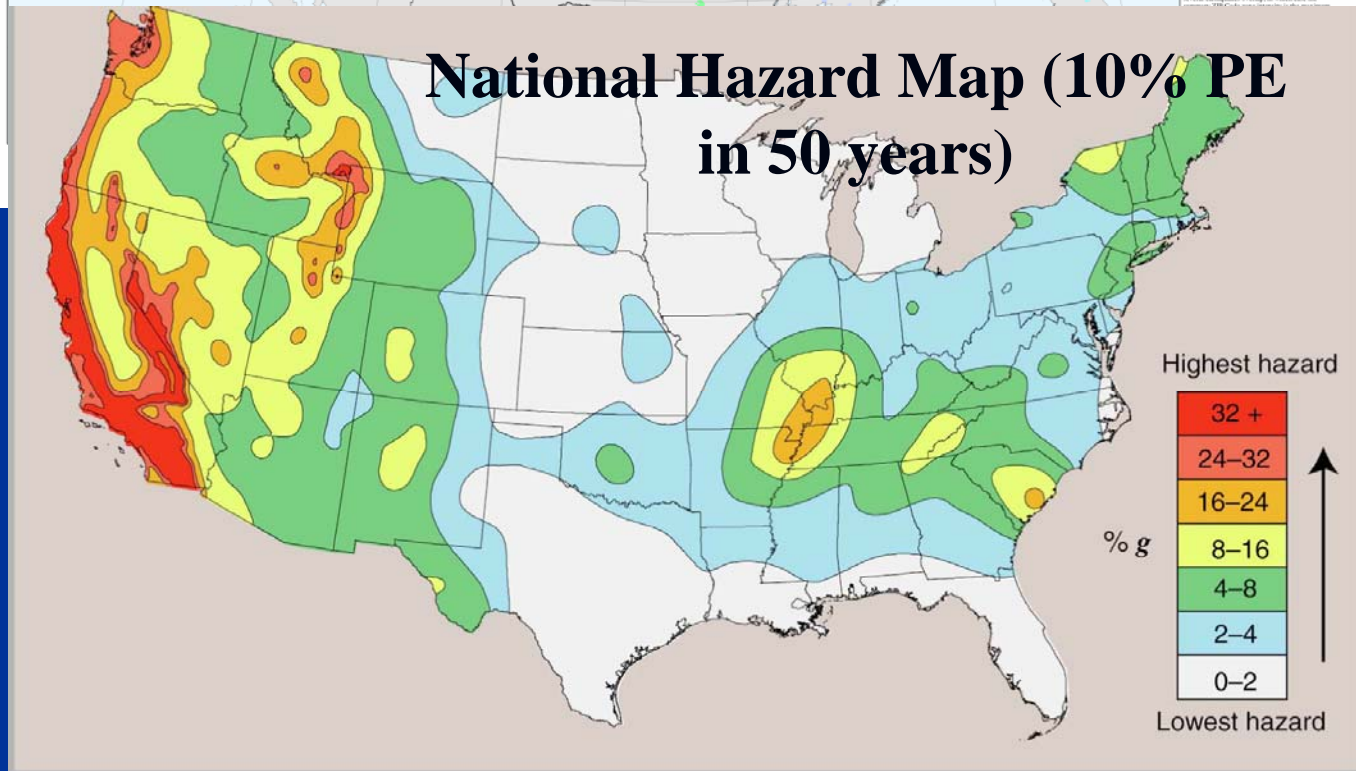


Slide composed
by D. Wald

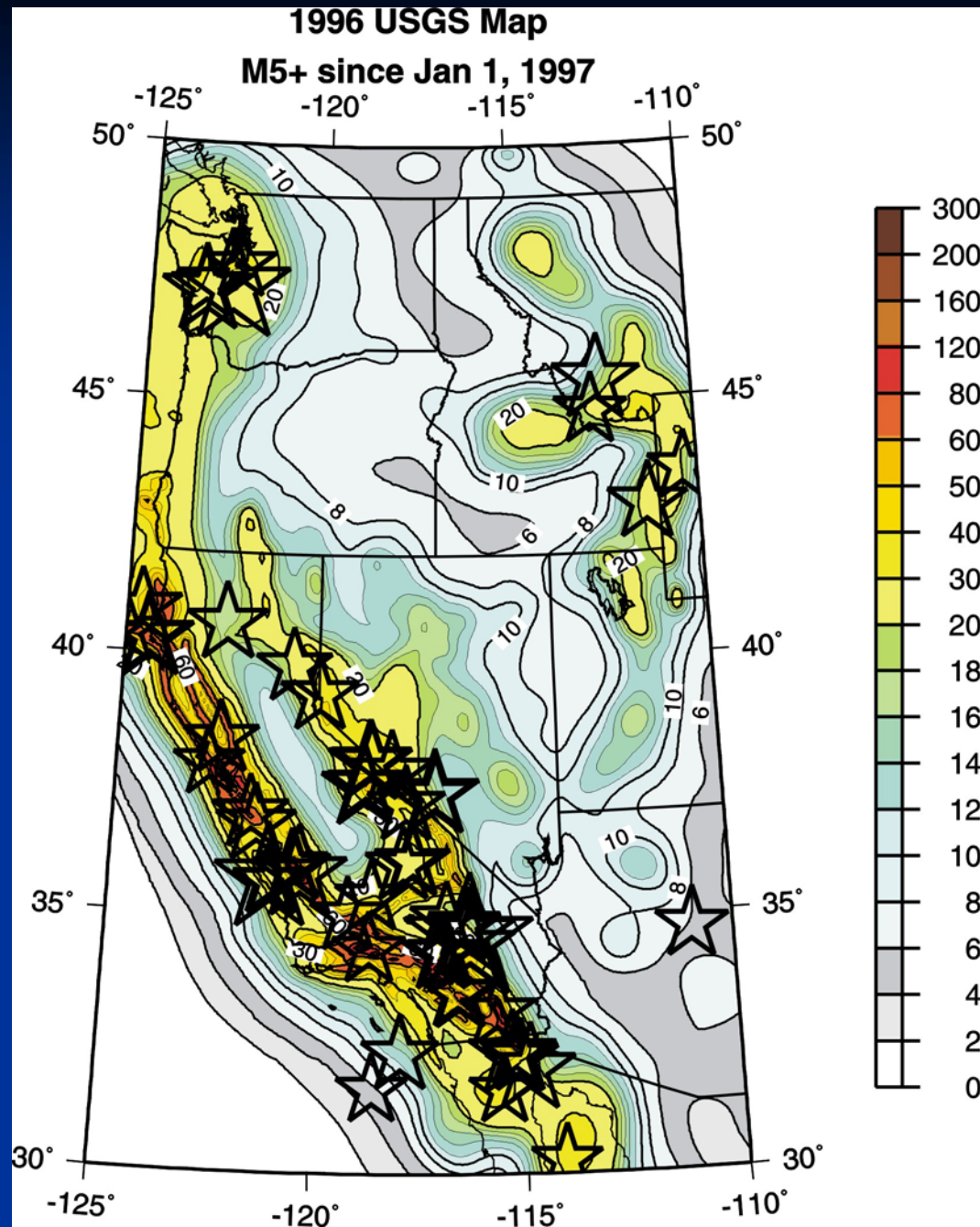
Did You Feel It? (5 Years)

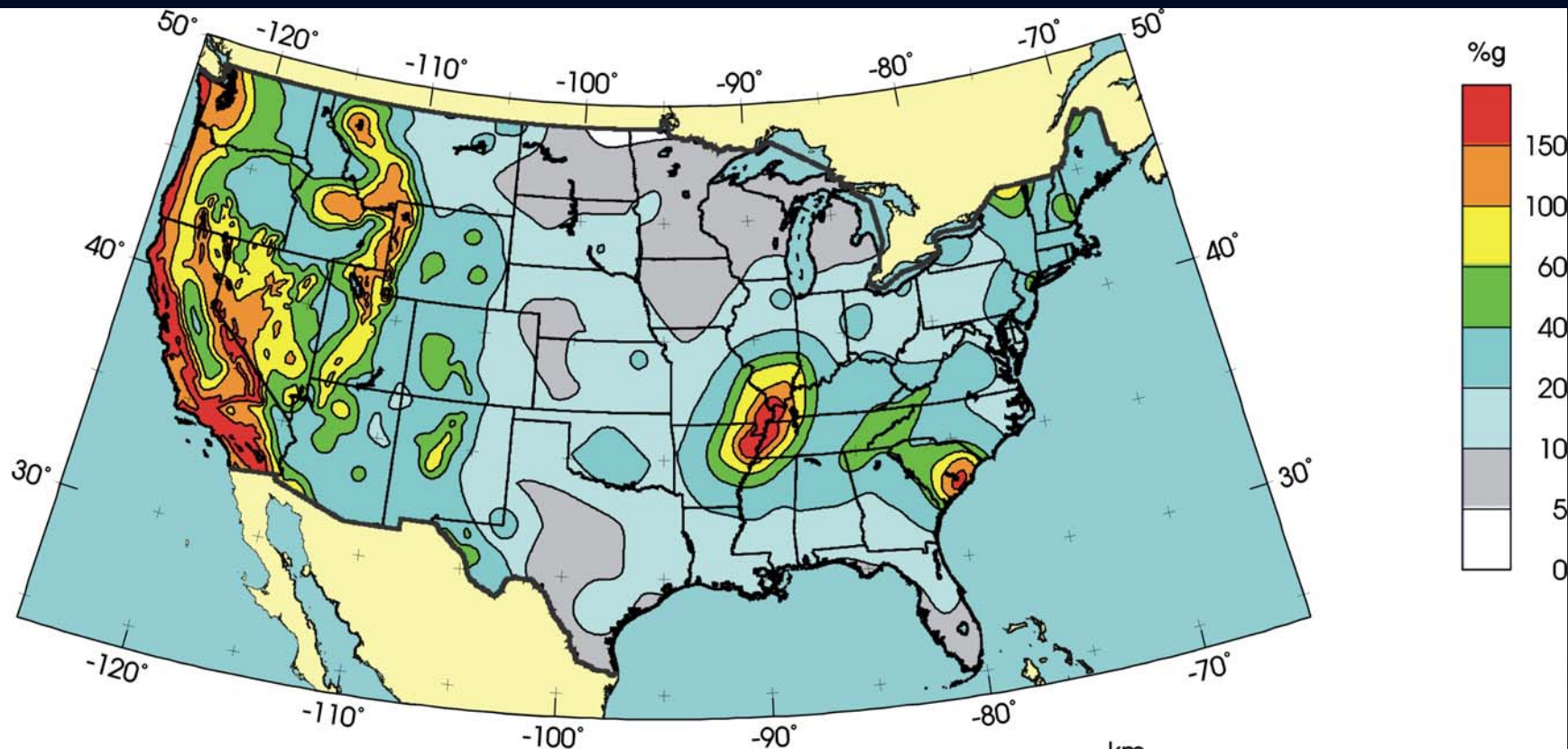


National Hazard Map (10% PE in 50 years)



PGA (%g)
With 10% PE
In 50 years





U.S. Geological Survey
National Seismic Hazard Mapping Project

Based on:

1. USGS Open-File Report 97-131 - F, 1997
2. USGS Open-File Report 96-532, 1996

km
0 500

miles

0 500

Scale - 1:45000000

Albers Equal-Area Conic Projection
Standard Parallels 29.5°N and 45.5°N

**Horizontal Spectral Response Acceleration (%g) for 0.2 Sec Period (5% of Critical Damping)
With 2% Probability of Exceedance in 50 Years
Firm Rock - 760 m/sec shear wave velocity**

Design/Hazard curve tool

International Building Code, Section 1615: Earthquake Loads - Site Ground Motion

File Project Name Help

Select Analysis Option **USGS Probabilistic Hazard Curves** Description

Select Geographic Region
Alaska

Select Edition
2003 International Building Code

Select Site Location - See Site Location Notes
 Latitude-Longitude : Recommended Zip Code

Latitude **61.2194** Longitude **-149.8882**
(72.0 to 48.0) (-200.0 to -125.0)

Design Parameters
Ground Motion Parameter MCE Ground Motion

Calculate Ss and S1 Calculate SM and SD Values

Design Spectra
Calculate Map Spectrum Calculate Site-Modified Spectrum
Calculate Site-Modified Design Spectrum View

Output for All Calculations

Bulk Mail Facility - 344 W 3rd Ave, Anchorage, AK 99501
Date and Time: 5/5/2005 9:33:58 AM

Alaska
2003 International Building Code
Spectral Response Accelerations Ss and S1
Latitude = 61.219400
Longitude = -149.888200
Ss and S1 = Mapped Spectral Acceleration Values
SiteClass B - Fa = 1.00, Fv = 1.00
Data are based on a 0.1 deg grid spacing.

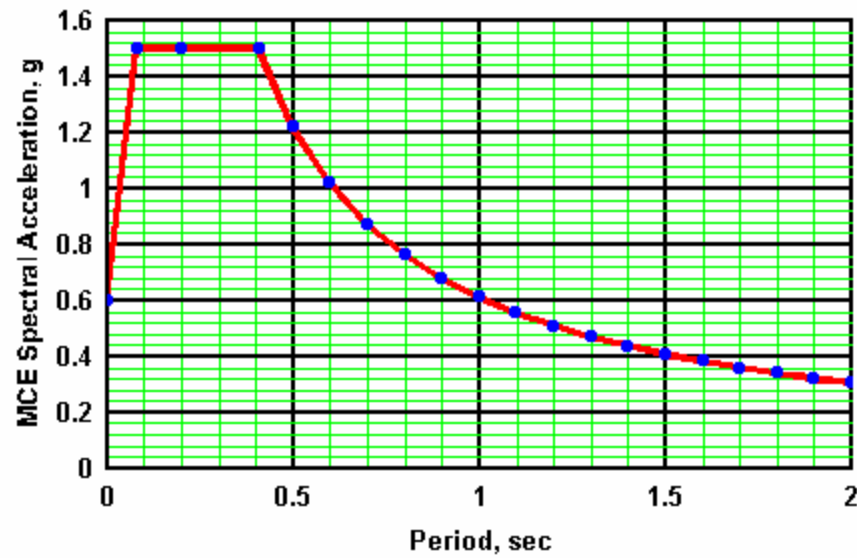
Period	Sa	
(sec)	(g)	
0.2	1.486	Ss, SiteClass B
1.0	0.550	S1, SiteClass B

Clear Output View Maps

CD available, Internet version available about
December, 2005

Response Spectrum Plot

Maximum Considered Earthquake Ground Motion
Site Class B $F_a = 1.00$ $F_v = 1.00$
Zip Code = 94111
Central Lat. = 37.798211 deg Central Long. = -122.398082 deg

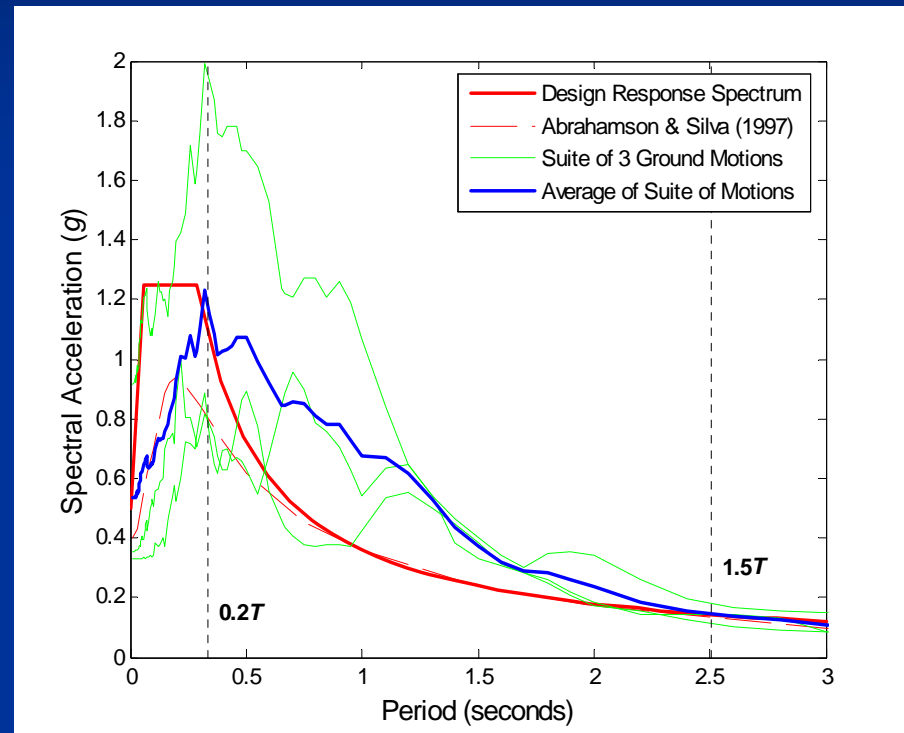
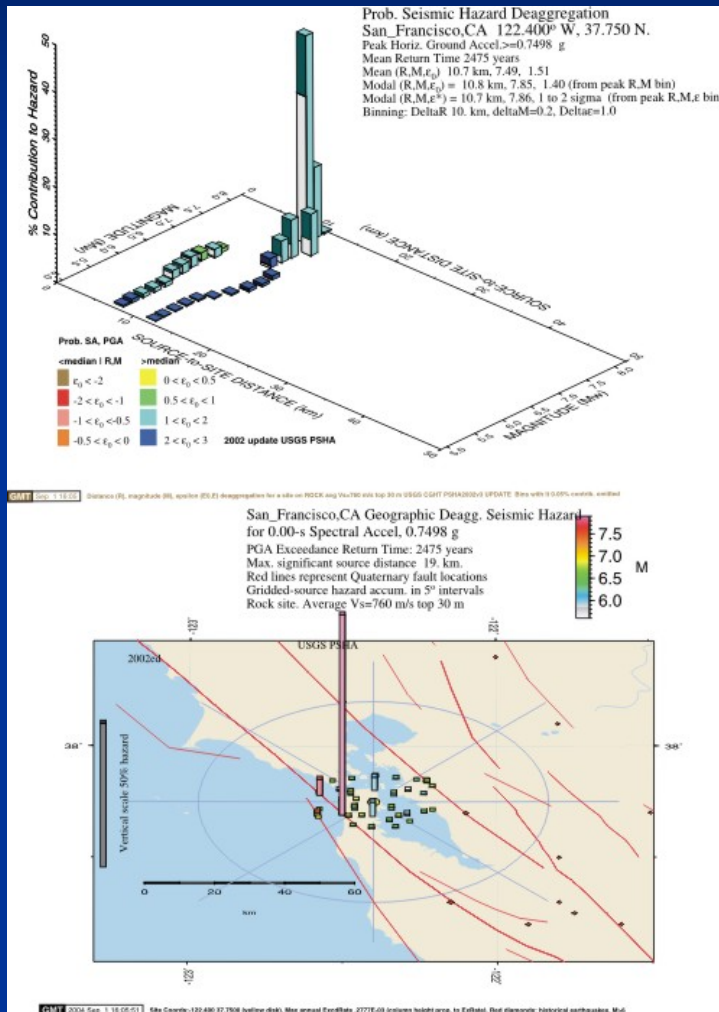


Period, sec	MCE Sa, g
0.00	0.600
0.08	1.500
0.20	1.500
0.41	1.500
0.50	1.221
0.60	1.018
0.70	0.872
0.80	0.763
0.90	0.678
1.00	0.611
1.10	0.555
1.20	0.509
1.30	0.470
1.40	0.436
1.50	0.407
1.60	0.382
1.70	0.359
1.80	0.339
1.90	0.321
2.00	0.305

Exit Viewer

Print Spectrum

Time-history for dynamic analysis



DGML=Design Ground Motion Library