



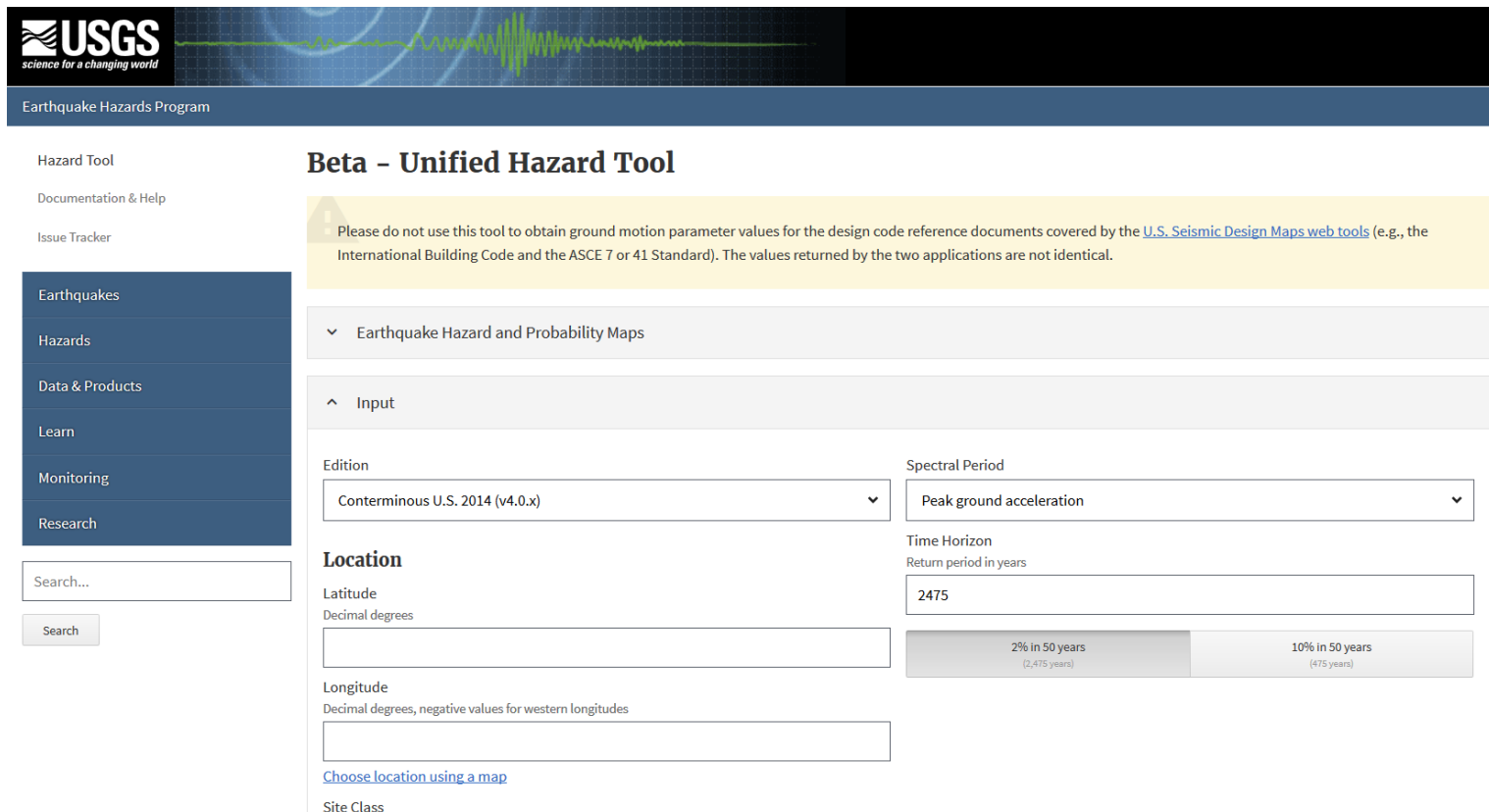
Determining a PGA Using the New USGS Tool

Website for PGA determination

The URL for the new PGA tool is:

<https://earthquake.usgs.gov/hazards/interactive/>

The new website looks like this:



The screenshot shows the USGS Earthquake Hazards Program website. The header includes the USGS logo and the text "Earthquake Hazards Program". The main title is "Beta - Unified Hazard Tool". A warning message states: "Please do not use this tool to obtain ground motion parameter values for the design code reference documents covered by the U.S. Seismic Design Maps web tools (e.g., the International Building Code and the ASCE 7 or 41 Standard). The values returned by the two applications are not identical." The interface is divided into a left sidebar and a main content area. The sidebar contains links for "Hazard Tool", "Documentation & Help", "Issue Tracker", "Earthquakes", "Hazards", "Data & Products", "Learn", "Monitoring", and "Research". The main content area has a "Beta - Unified Hazard Tool" section with a "Please do not use this tool..." warning. Below this is a "Earthquake Hazard and Probability Maps" section. The "Input" section includes a dropdown for "Edition" (set to "Conterminous U.S. 2014 (v4.0.x)"), a dropdown for "Spectral Period" (set to "Peak ground acceleration"), a "Time Horizon" section with a "Return period in years" input (set to "2475"), and a "Location" section with "Latitude" and "Longitude" inputs. The "Location" section also includes a "Choose location using a map" link and a "Site Class" input. The "Time Horizon" section includes two buttons: "2% in 50 years (2,475 years)" and "10% in 50 years (475 years)".

USGS science for a changing world

Earthquake Hazards Program

Hazard Tool

Documentation & Help

Issue Tracker

Earthquakes

Hazards

Data & Products

Learn

Monitoring

Research

Search...

Search

Beta - Unified Hazard Tool

Please do not use this tool to obtain ground motion parameter values for the design code reference documents covered by the [U.S. Seismic Design Maps web tools](#) (e.g., the International Building Code and the ASCE 7 or 41 Standard). The values returned by the two applications are not identical.

Earthquake Hazard and Probability Maps

Input

Edition: Conterminous U.S. 2014 (v4.0.x)

Spectral Period: Peak ground acceleration

Time Horizon: Return period in years: 2475

2% in 50 years (2,475 years) 10% in 50 years (475 years)

Location

Latitude: Decimal degrees

Longitude: Decimal degrees, negative values for western longitudes

[Choose location using a map](#)

Site Class

Calculating PGA

Ensure the appropriate selections are made in the drop-down menus for **Edition** and **Spectral Period** as indicated below:

Edition	Spectral Period
Dynamic: Conterminous U.S. 2014 (v4.1.1) ▼	Peak ground acceleration ▼
Latitude	Time Horizon
Decimal degrees	Return period in years
	475
Longitude	
Decimal degrees, negative values for western longitudes	
Choose location using a map	

2% in 50 years
(2,475 years)

5% in 50 years
(975 years)

10% in 50 years
(475 years)

Calculating PGA

To determine the location of the property, enter the address by selecting the link for *Choose location using a map*:

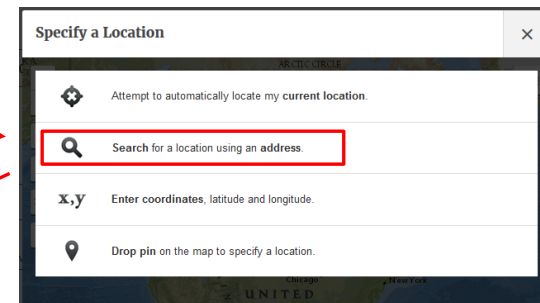
Latitude

Decimal degrees

Longitude

Decimal degrees, negative values for western longitudes

Choose location using a map



The latitude/longitude will automatically be entered based on the address

The **Time Horizon** field will be automatically populated when you select the **10% in 50 years** button:

Edition Dynamic: Conterminous U.S. 2014 (v4.1.1) ▼	Spectral Period Peak ground acceleration ▼
Latitude Decimal degrees 	Time Horizon Return period in years 475
Longitude Decimal degrees, negative values for western longitudes 	2% in 50 years (2,475 years) 10% in 50 years (475 years) 5% in 50 years (975 years)
Choose location using a map	

Calculating PGA

Select the appropriate **Site Class** based on the property's location as indicated below:

Decimal degrees, negative values for western longitudes

[Choose location using a map](#)

Site Class

760 m/s (B/C boundary)

▼

Site Class

760 m/s (B/C boundary) ▼

Please select...

180 m/s (D/E boundary)

259 m/s (Site class D)

360 m/s (C/D boundary)

537 m/s (Site class C)

760 m/s (B/C boundary)

1150 m/s (Site class B)

2000 m/s (Site class A)

compute a hazard curve.

- **259 m/s (Site class D)** for properties located in California, Nevada, Oregon or Washington
- **760 m/s (B/C boundary)** for properties all other locations

Scroll down to the **Deaggregation** section and select “Compute Deaggregation”

^ Deaggregation

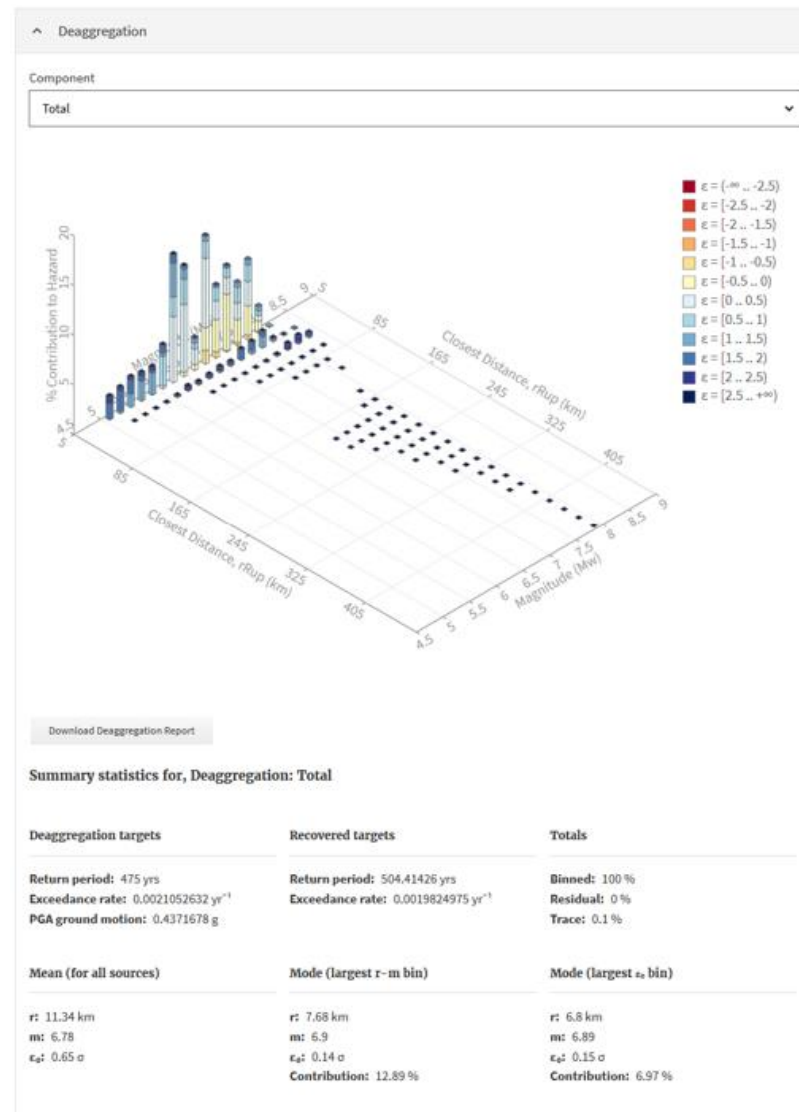
Component

Please select “Edition”, “Location” “Site Class”, “Spectral Period” & “Time Horizon” above to compute a deaggregation.

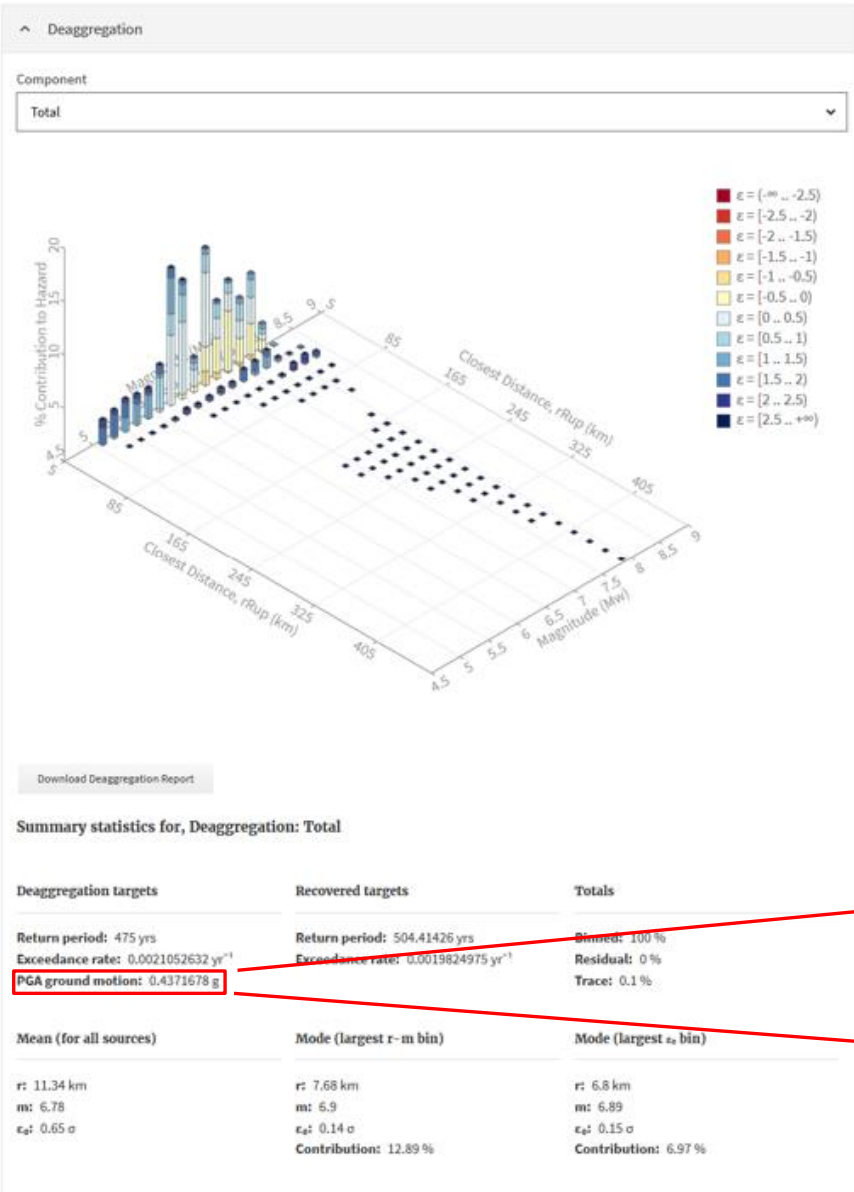
Compute Deaggregation

Calculating PGA

The output will look similar to this:



Calculating PGA



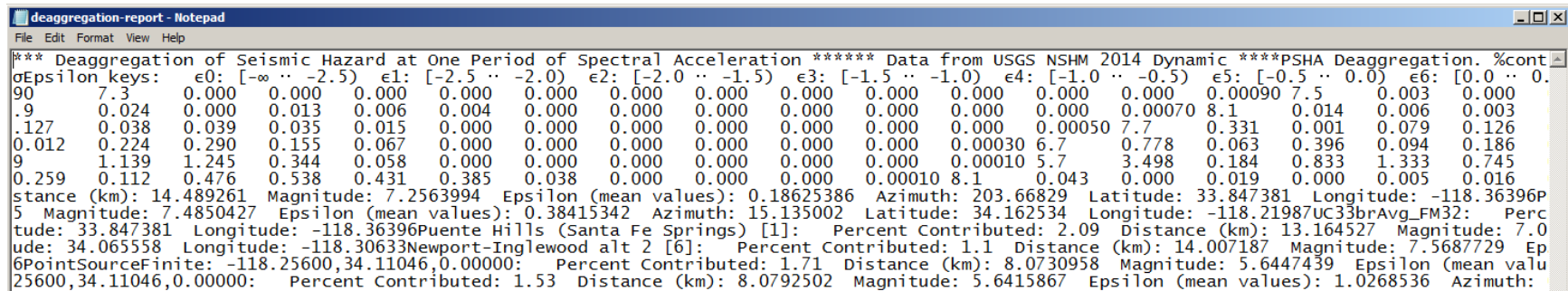
The PGA is noted as the
PGA ground motion

PGA ground motion: 0.4371678 g

Calculating PGA

Use your browser's print function to print the webpage to PDF for upload to DMS.

If you use the “Download Deaggregation Report” button, the result is a difficult to read text file:



```
*** Deaggregation of Seismic Hazard at One Period of Spectral Acceleration ***** Data from USGS NSHM 2014 Dynamic *****PSHA Deaggregation. %cont
Epsilon keys:  e0: [-∞ .. -2.5)  e1: [-2.5 .. -2.0)  e2: [-2.0 .. -1.5)  e3: [-1.5 .. -1.0)  e4: [-1.0 .. -0.5)  e5: [-0.5 .. 0.0)  e6: [0.0 .. 0.
90      7.3      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.00090 7.5      0.003      0.000
.9      0.024      0.000      0.013      0.006      0.004      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.00070 8.1      0.014      0.006      0.003
.127    0.038      0.039      0.035      0.015      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.00050 7.7      0.331      0.001      0.079      0.126
0.012   0.224      0.290      0.155      0.067      0.000      0.000      0.000      0.000      0.000      0.000      0.00030 6.7      0.778      0.063      0.396      0.186
9       1.139      1.245      0.344      0.058      0.000      0.000      0.000      0.000      0.000      0.000      0.00010 5.7      3.498      0.184      0.833      1.333      0.745
0.259   0.112      0.476      0.538      0.431      0.385      0.038      0.000      0.000      0.000      0.00010 8.1      0.043      0.000      0.019      0.000      0.005      0.016
stance (km): 14.489261 Magnitude: 7.2563994 Epsilon (mean values): 0.18625386 Azimuth: 203.66829 Latitude: 33.847381 Longitude: -118.36396P
5 Magnitude: 7.4850427 Epsilon (mean values): 0.38415342 Azimuth: 15.135002 Latitude: 34.162534 Longitude: -118.21987UC33brAvg_FM32: Perc
tude: 33.847381 Longitude: -118.36396Puente Hills (Santa Fe Springs) [1]: Percent Contributed: 2.09 Distance (km): 13.164527 Magnitude: 7.0
ude: 34.065558 Longitude: -118.30633Newport-Inglewood alt 2 [6]: Percent Contributed: 1.1 Distance (km): 14.007187 Magnitude: 7.5687729 Ep
6PointSourceFinite: -118.25600,34.11046,0.00000: Percent Contributed: 1.71 Distance (km): 8.0730958 Magnitude: 5.6447439 Epsilon (mean valu
25600,34.11046,0.00000: Percent Contributed: 1.53 Distance (km): 8.0792502 Magnitude: 5.6415867 Epsilon (mean values): 1.0268536 Azimuth:
```