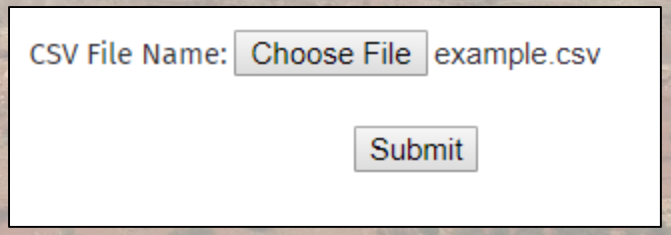

GeoStriker

Instructions:

- Upload a .csv file formatted as:
  - X, Y, Z, Name
  - Example:



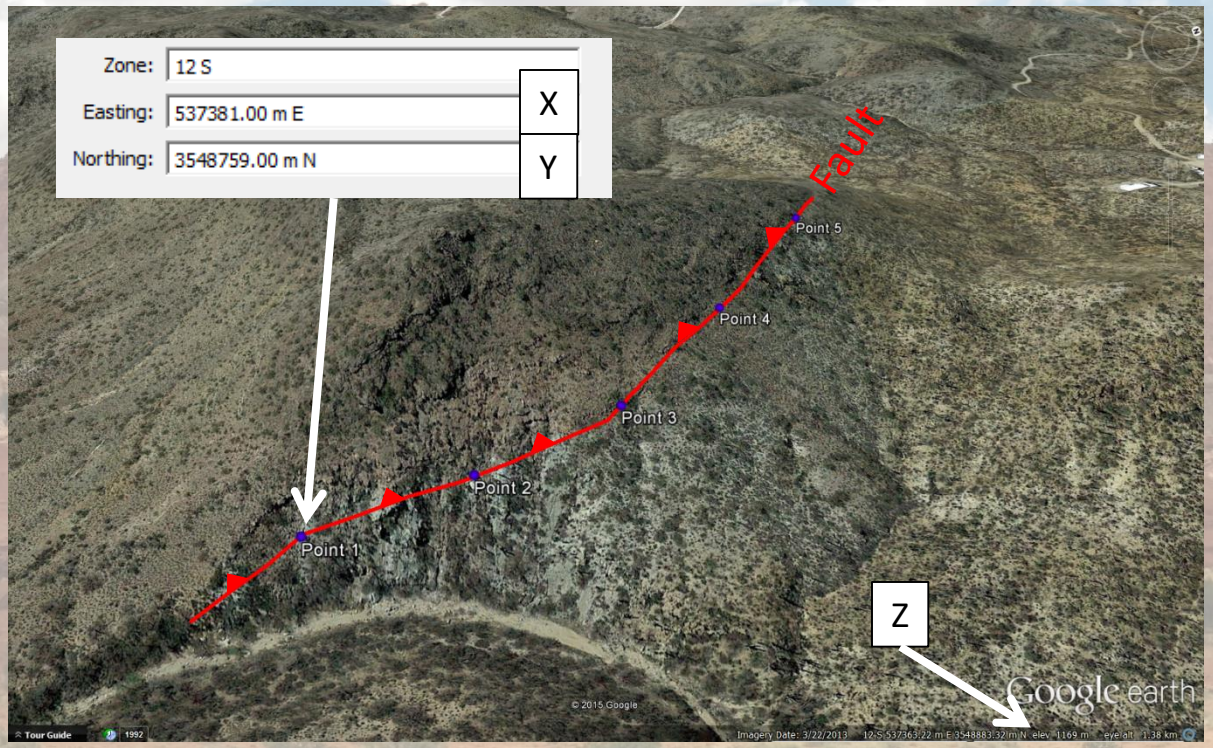
example.csv - Notepad

File Edit Format View Help

```
2044294,6928535,-240,fault1
2044534,6928248,-1000,fault1
2044624,6928429,-400,fault1
2044395,6928329,-600,fault1
2044399,6928043,-340,fault2
2044200,6928248,100,fault2
2044300,6928029,-248,fault2
2044500,6928299,-300,fault2
```

- Note that Z decreases with depth
- Multiple faults can be added at once.

Example Use #1:



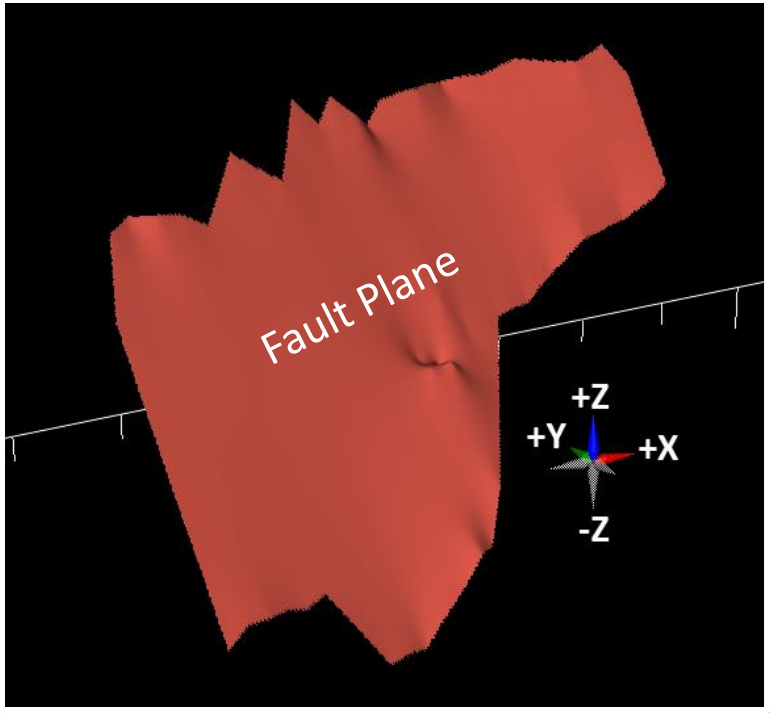
*It's important to note that Z decreases value with depth. So in this example, which is above sea level, Z would be positive. Seismic software often exports TVDSS values as positive, so make sure to check this!

Mapping in Google Earth or other satellite imagery is a great way to supplement field mapping.

Strike and dip of faults can be determined by taking XYZ points of the fault exposure on the surface and plugging them into the calculator.

Note that Google Earth has very, very poor resolution when it comes to Z values. Probably better off using a DEM to get more accurate values, but Google Earth works for most class-based mapping projects.

Example Use #2:



After exporting a fault data from seismic, edit the ASCII output to be X, Y, Z, faultname.

Note the Z value should decrease with depth. For example, if this fault were 20,000 ft below sea level, the Z value should be -20000.

Also note the input data was all referenced to the original point. This is not necessary.

Output Data:

Name	Strike	Dip	Direction
Original	70.2	47.3	Southeast

Input Data:

0	0	0	Original
-1311	3484	4466	Original
-1611	23	792	Original
-2580	2598	4099	Original
-1156	233	825	Original
-2085	2703	3960	Original
-1980	-84	865	Original
-3094	2445	4156	Original
-2438	-285	898	Original
-3633	2427	4189	Original
-2921	-428	931	Original
-4045	2123	4115	Original
-3364	-663	808	Original
-4267	1387	3462	Original
-273	3566	4115	Original
932	362	-65	Original
366	4485	4736	Original
2017	792	335	Original
2479	983	555	Original
909	4495	4474	Original
2679	2987	2125	Original
1861	4816	4452	Original
2166	2908	2239	Original
1312	4818	4680	Original
2298	2613	2182	Original
2888	1295	557	Original
2786	2748	2190	Original
3268	1668	1014	Original
2246	5139	4313	Original
2997	3525	2647	Original
2663	5428	4485	Original
3556	3509	2329	Original
3633	5712	4517	Original
4490	3873	2321	Original
4484	6237	4493	Original
5422	4257	2329	Original
5527	6370	4476	Original
6311	4717	2517	Original
7274	5019	2754	Original
6501	6651	4582	Original
8663	5591	2794	Original
8103	6773	4436	Original
9647	5849	2925	Original
9034	7143	4542	Original
10104	6054	3039	Original
9656	6999	4182	Original

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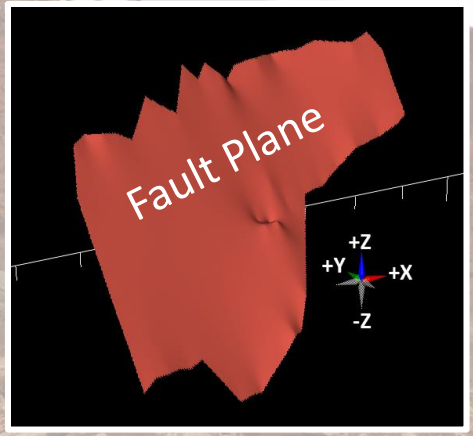
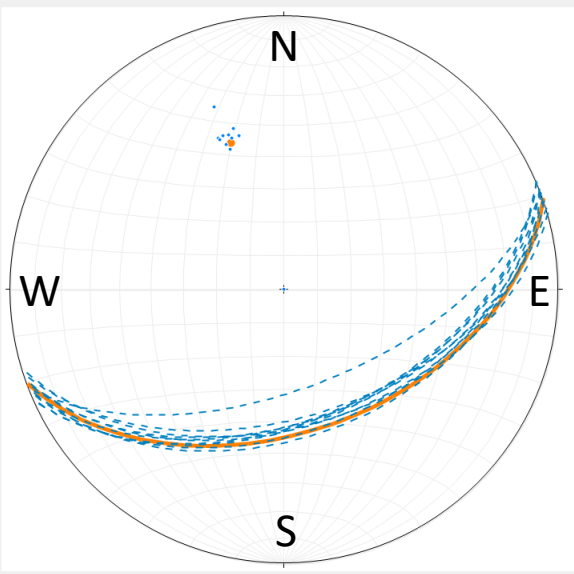
Accuracy:



Taking three random points from the original input data and performing a three point problem (TPP) on them yields similar results, but can be off by 13° or more in this case. The best fit plane method yields more accurate results.

Name	Strike	Dip	Direction
Original	70.2	47.3	Southeast
TPP9	68.3	47.3	Southeast
TPP8	66.4	50.3	Southeast
TPP10	73.6	48.8	Southeast
TPP5	69.1	45.6	Southeast
TPP4	71.0	48.7	Southeast
TPP7	66.7	49.6	Southeast
TPP6	70.3	50.2	Southeast
TPP1	69.1	60.4	Southeast
TPP3	68.4	50.6	Southeast
TPP2	72.5	51.6	Southeast



Data plotted using Rick Allmendinger's Stereonet 9. Orange is original data using best fit plane method, blue is 10 iterations of three point problems.