

Earthquake Lab #1: Triangulation of July 2016 Earthquake

Objective: To locate an earthquake's epicentre using data collected at three seismic stations.

Background: Imagine you have awakened in the middle of the night to what sounds like thunder. Your first thought is that a vehicle has hit your home. Then you remember that the threat of a great earthquake is real and imminent. You scramble out of bed and take cover, in case there is a second wave arriving. This time, nothing happens. The earthquake is over.

Over the next few hours, information pours in from all over, including seismograph readings from three earthquake stations:

Seismic station where data was recorded	Latitude	Longitude	Distance to epicentre (km)
Station A	49.25	-123.21	71 km
Station B	48.65	-123.43	126 km
Station C	48.67	-122.27	93 km

Procedure:

1. Go to: <https://www.iris.edu/app/triangulation/>
2. Use the top right "+ Station" symbol to create a new seismic station.
3. At the bottom of the page enter the geographical information (latitude and longitude) for Station A. Enter the distance to the epicentre in the box titled "Distance kilometers". This will draw a circle 71 km in radius, from seismic station A.
4. Repeat for Stations B and C.
5. Locate the latitude and longitude of the epicentre by dragging a NEW station to the point where all three circles intersect.

Conclusion:

- a) *Are you able to determine the location of an earthquake's epicenter from one seismograph station alone? Why or why not? Explain your answer. (*mild*)

