

TITLE: Tsunami Travel Times for the Caribbean
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A tsunami is a series of water waves of long wavelength, generated in an ocean by a disturbance that vertically displaces the water. This project was conducted to investigate Tsunami Travel Times for the Eastern Caribbean. As a result, a database can be created that would provide probable arrival times of tsunamis at the time of an earthquake or volcanic eruption.

To achieve the objectives of the project, a representative set of sources for possible tsunamigenic events were entered into a Tsunami Travel Time (TTT) software package to calculate first arrival travel times on a grid based on an application of Huygens's Principle. The sources were assumed to be shallow earthquakes in the Caribbean and Atlantic Oceans with locations based on the historical earthquake data from the United States Geological Survey. In addition tsunamis generated by three major volcanoes in Cape Verde, Canary and Azores Islands were also investigated.

Tsunamis travel at speeds of approximately 500 - 1000 km per hour. Given the relatively small size of the Caribbean region, the time available to respond to a possible tsunamigenic event is much less than in other parts of the world. Another factor to consider is that currently available software is not fast enough to be used in real time. For this reason, reference tables would be of particular importance when needed to inform the Eastern Caribbean of the arrival time of a tsunami. Hence, during a tsunamigenic event the actual tsunami travel times for the Caribbean would be compared to these reference tables and adjusted for more accurate predictions.