

Tsunami

Introduction

A tsunami also known as a seismic sea wave is a series of waves in a body of water caused by the displacement of a large volume of water. With this toolbox, the initial water level displacement induced by an earthquake can be computed.

Usage of the toolbox

The Tsunami Toolbox enables the user to draw a fault line and subsequently compute the resulting tsunami in three steps.

1. **Determine the earthquake**
 - a. Draw a fault line
 - i. Determine the parameters of the earthquake e.g. the depth
 - ii. Click on the map to determine where the earthquake takes place (see the first Figure)
 - b. Load tsunami from a *.xml file. This is basically a list of points which describes the earthquake.
2. **Compute the tsunami** (initial water level displacement induced by an earthquake). This can take some time and will result in an extra figure representing the water level displacement. (see the second Figure)
3. **Run the Delft3D-FLOW simulation**

The possibilities to simulate tropical cyclones within Delft Dashboard are also demonstrated in [Tutorial 3: Tsunami wave modelling](#).

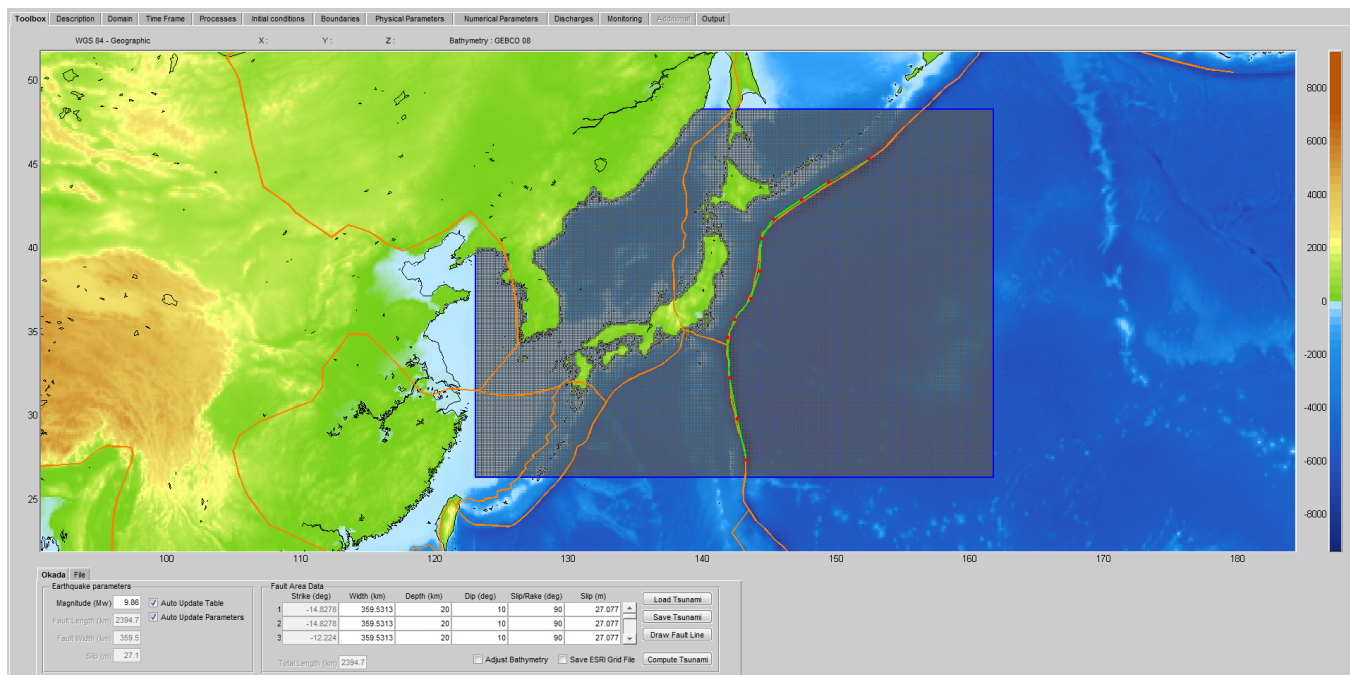


Figure: Fault line as determined with Delft Dashboard for the coast of Japan

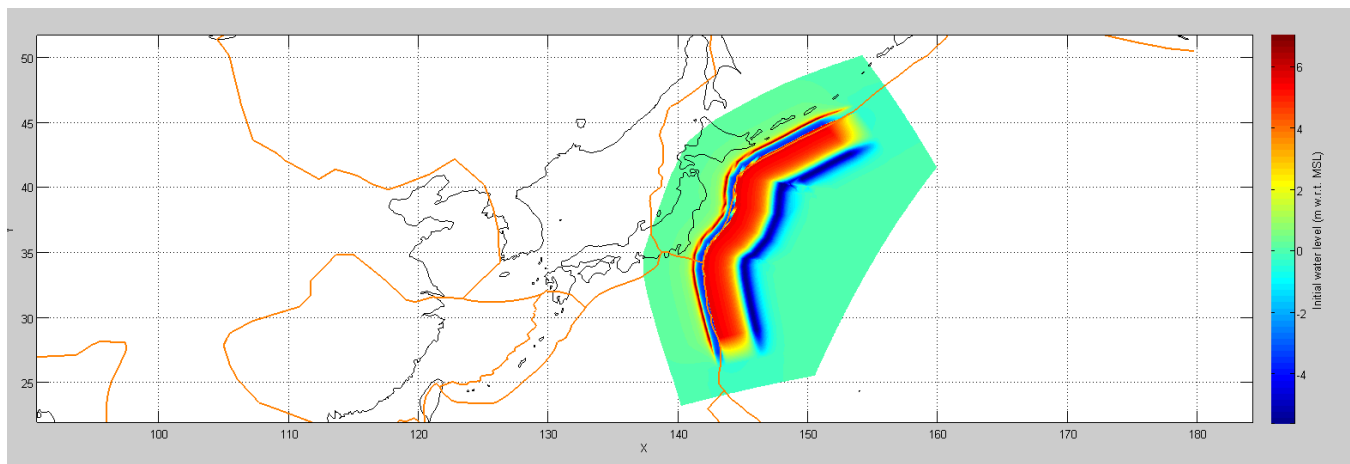


Figure: Resulting water level displacement as a result of the earthquake as calculated with Delft Dashboard for the coast of Japan