

**TSUNAMI HAZARD ASSESSMENT ALONG THE COAST OF LINGAYEN GULF,  
PANGASINAN, PHILIPPINES**

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**1. Fault Parameters of Tsunami Sources**

Table 1. Fault parameters for each case scenario earthquake.

Scenario	Mag-nitude	Location of the fault (lon, lat)		Length (km)	Width (km)	strike (deg)	dip (deg)	rake (deg)	Slip Amount (m)	Depth (m)
Case 1 (Historical)	7.6	119.10	16.06	97.72	53.21	1	36	95	1.21	0
Case 2 (Maximum Credible)	8.4	119.10	16.06	254.0	91.16	1	36	95	3.69	0

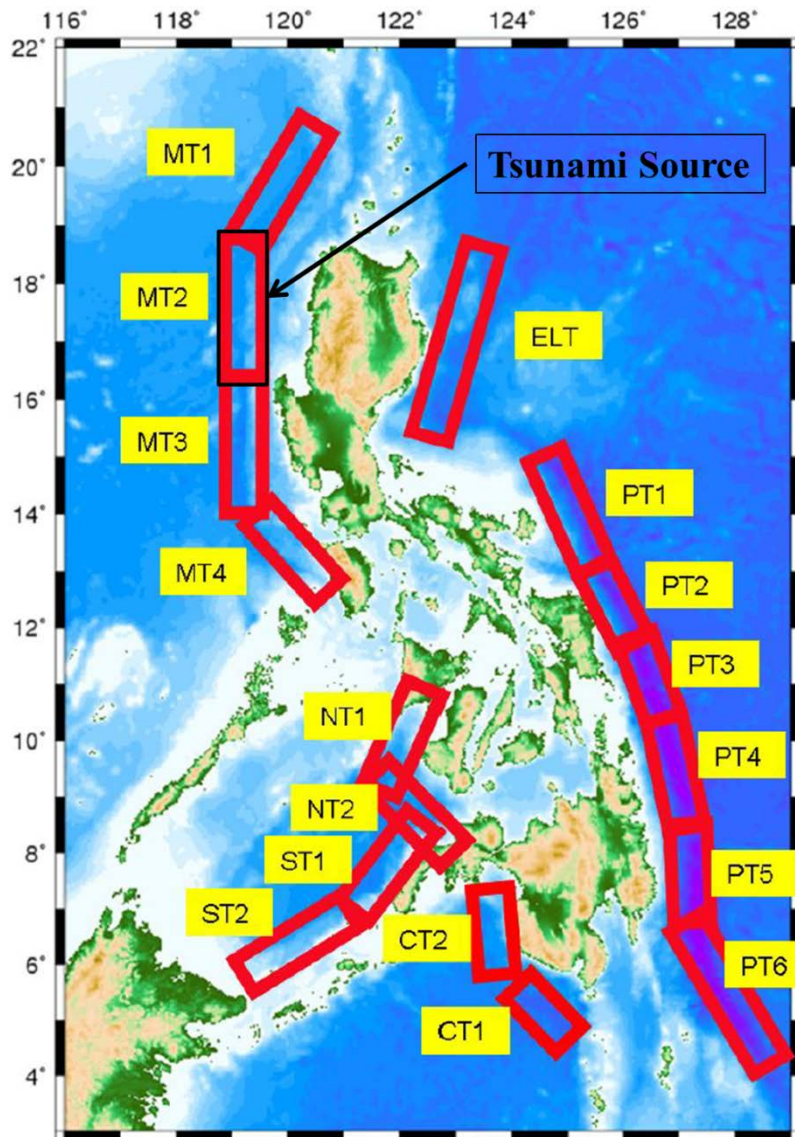


Figure 1. Location map of MT2 and other tsunامي sources in the Philippines (Salcedo, 2010). The fault parameters of the segment 2 (MT2) is used in this study.

## 2. Tide Gauge Stations



Figure 2. Location of the tide gauge stations set as output points. The yellow triangles are existing, pre-existing and proposed tide gauge stations. JICA and NAMRIA tide gauge stations are close to each other. The red triangles are assumed tide gauge stations.

Table 2. Location of the tide gauge stations.

Point No.	Latitude	Longitude	GEBCO 1 arc-min depth (m)	GEBCO 30 arc-sec depth (m)	GEBCO 30 arc-sec + digitized map depth (m)
ASTI	16°23'39.55"N	119°53'49.94"E	1.9	25.8	16.0
TGS01	16°20'21"N	119°59'57"E	5.5	14.6	10.4
TGS02	16°10'28"N	120°04'07"E	2.5	41.0	41.8
TGS03	16°02'46"N	120°11'14"E	3.3	12.1	13.3
TGS04	16°04'41"N	120°19'56"E	8.2	13.1	13.5
TGS05	16°14'22"N	120°22'25"E	3.5	6.7	7.9
JICA	16°36'41.48"N	120°17'43.76"E	9.8	43.7	35.0
NAMRIA	16°36'37.01"N	120°17'40.76"E	9.8	43.7	35.0

### 3. Results (Tsunami Heights)

#### Case 1: M7.6

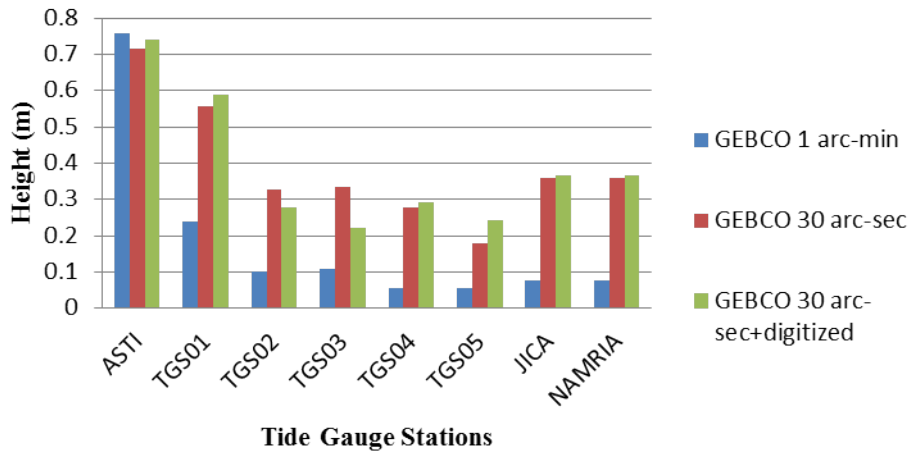


Figure 3. Maximum heights computed at each tide gauge station using the 3 bathymetry data in the case 1 earthquake scenario.

#### Case 2: M8.4

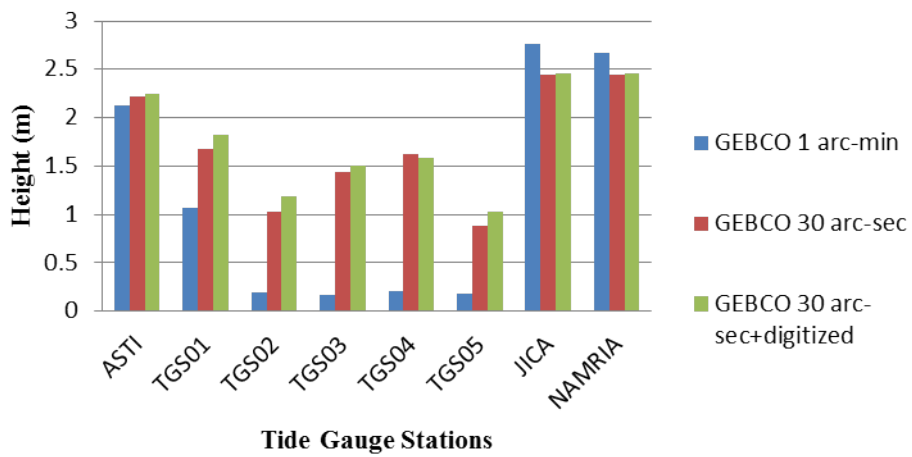


Figure 4. Same as Figure 23 but for the case 2 earthquake scenario.

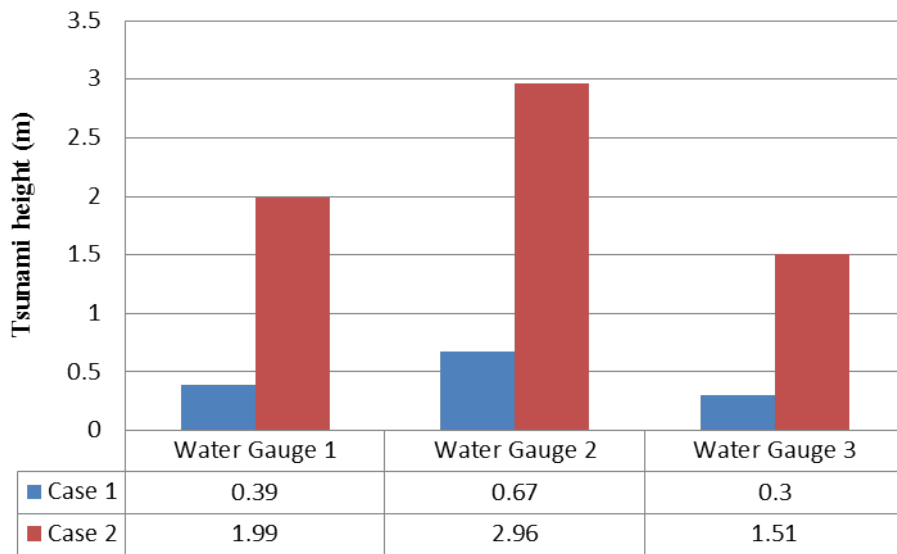


Figure 5. Maximum tsunami heights estimated at water gauge stations.

#### 4. Conditions for Computation

Table 3. Summary of the parameters used in tsunami height simulation.

Bathymetry Data	GEBCO 1'	GEBCO 30''	GEBCO 30'' + Digitized bathymetry
Spatial grid size	1 arc-min (1850 m)	1 arc-min (1850 m)	1 arc-min (1850 m)
Grid dimension	270 x 360	270 x 360	270 x 360
Temporal grid size ( $\Delta t$ )	3s	3s	3s