TSUNAMI INUNDATION MODELING ALONG THE EAST COAST OF SABAH, MALAYSIA FOR POTENTIAL EARTHQUAKES IN SULU SEA
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1. Fault Parameters

Table 1. Fault parameters for scenario earthquake.

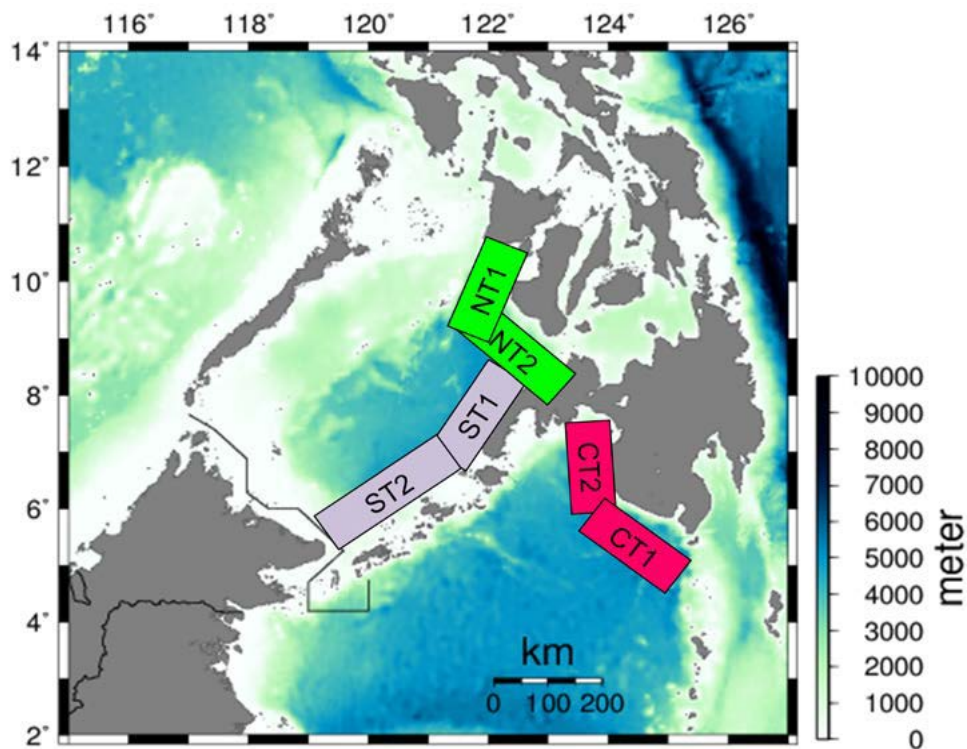| Scenario	Source	M_w	Fault Location		Length	Width	Strike	Dip	Rake	Slip
			Long (°E)	Lat (°N)	(km)	(km)	(deg)	(deg)	(deg)	(m)
1	ST1	8.2	121.4	7.2	167	71.97	30	45	129	2.26
	ST2		119.6	6.2	230	84.00	60	45	90	3.16
2	ST1	8.5	121.4	7.2	167	71.97	30	45	129	10.0
	ST2		119.6	6.2	230	84.00	60	45	90	10.0
3	ST1	8.8	121.4	7.2	167	71.97	30	45	129	20.0
	ST2		119.6	6.2	230	84.00	60	45	90	20.0

Figure 1. Locations of each trench segment represented by colored

rectangular (Mazni, 2011).

2. Assumed Tide Gauge Stations

Table 2. Location of assumed tide gauge stations.

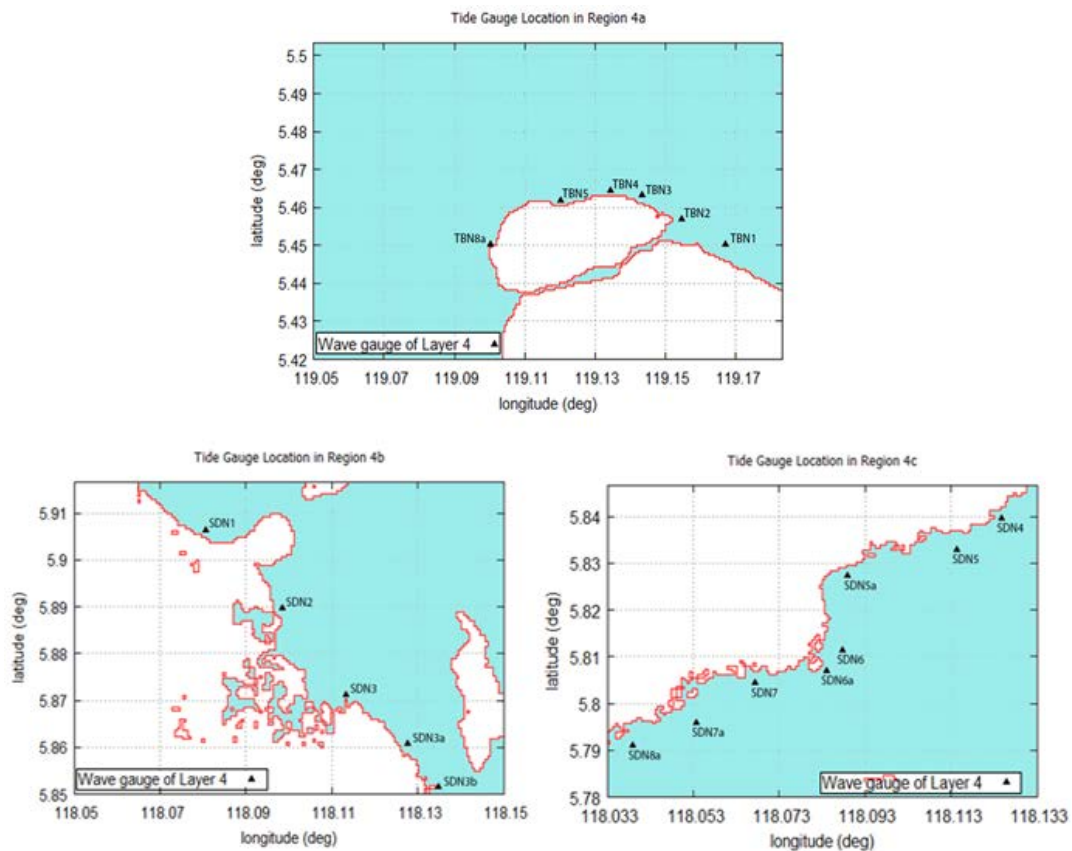| Point No.	Longitude	Latitude	Depth (m)	Point No.	Longitude	Latitude	Depth (m)
TBN1	119°10'E	5°27'N	2.04	SDN3b	118°08'E	5°51'N	1.23
TBN2	119°10'E	5°28'N	2.06	SDN4	118°08'E	5°50'N	6.74
TBN3	119°09'E	5°28'N	5.47	SDN5	118°07'E	5°49'N	4.17
TBN4	119°08'E	5°28'N	2.67	SDN5a	118°06'E	5°49'N	2.08
TBN5	119°07'E	5°28'N	2.42	SDN6	118°06'E	5°48'N	3.45
TBN8a	119°06'E	5°27'N	6.97	SDN6a	118°05'E	5°48'N	2.41
SDN1	118°05'E	5°55'N	3.94	SDN7	118°04'E	5°47'N	2.21
SDN2	118°07'E	5°54'N	1.00	SDN7a	118°04'E	5°48'N	2.18
SDN3	118°07'E	5°53'N	1.16	SDN8a	118°03'E	5°47'N	2.20
SDN3a	118°08'E	5°52'N	5.30				

Figure 2. Assumed tide gauge locations in Region 4a (top), Region 4b (bottom left) and Region 4c (bottom right).
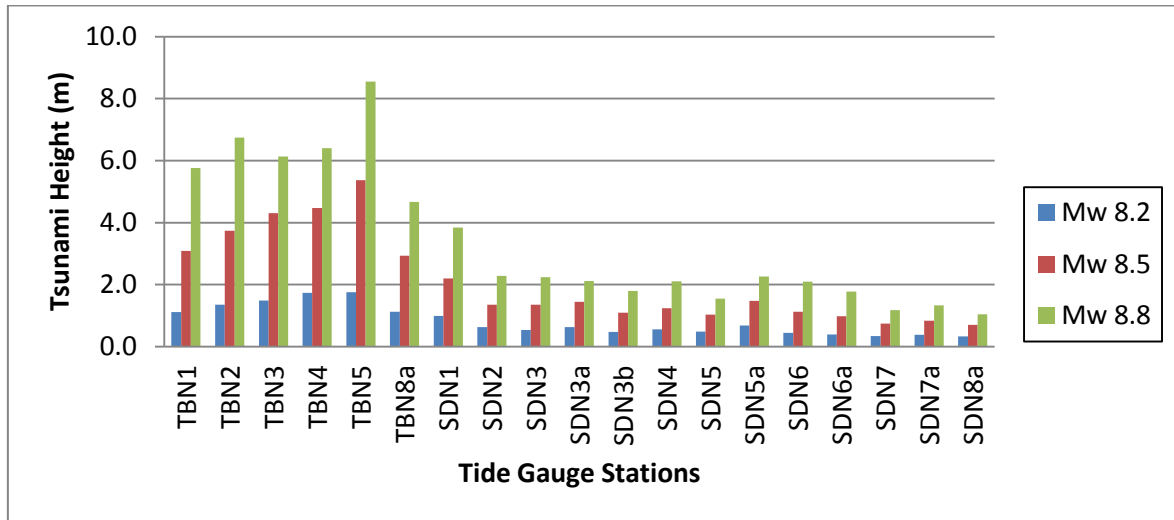
3. Results (Tsunami Height)

Figure 3. Maximum tsunami heights at each assumed tide gauge for all scenarios.
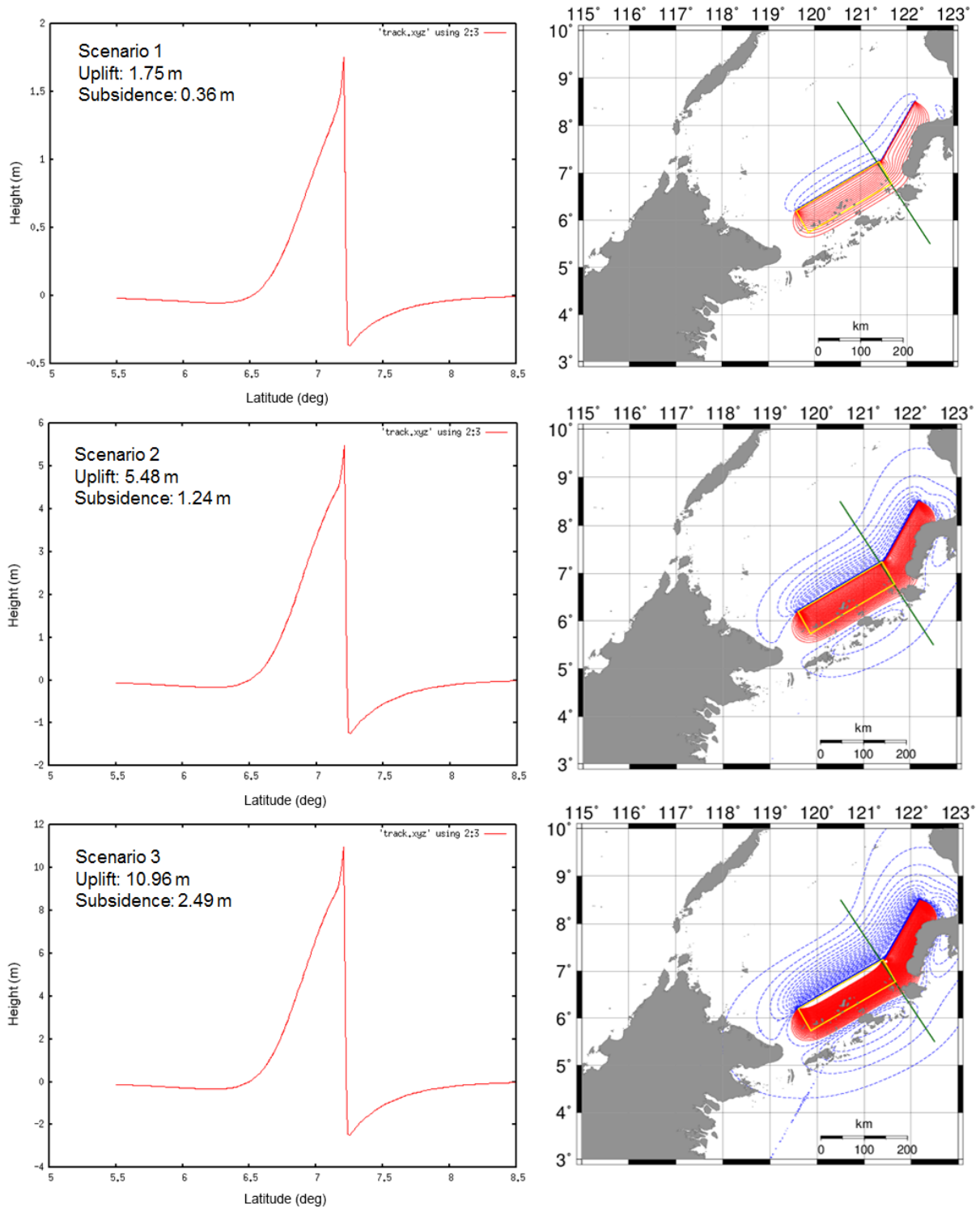
Figure 4. Seafloor deformation and cross section for Scenario 1, Scenario 2 and Scenario 3. The blue and red contours are the subsidence and uplift areas respectively with a contour interval of 0.1 m.
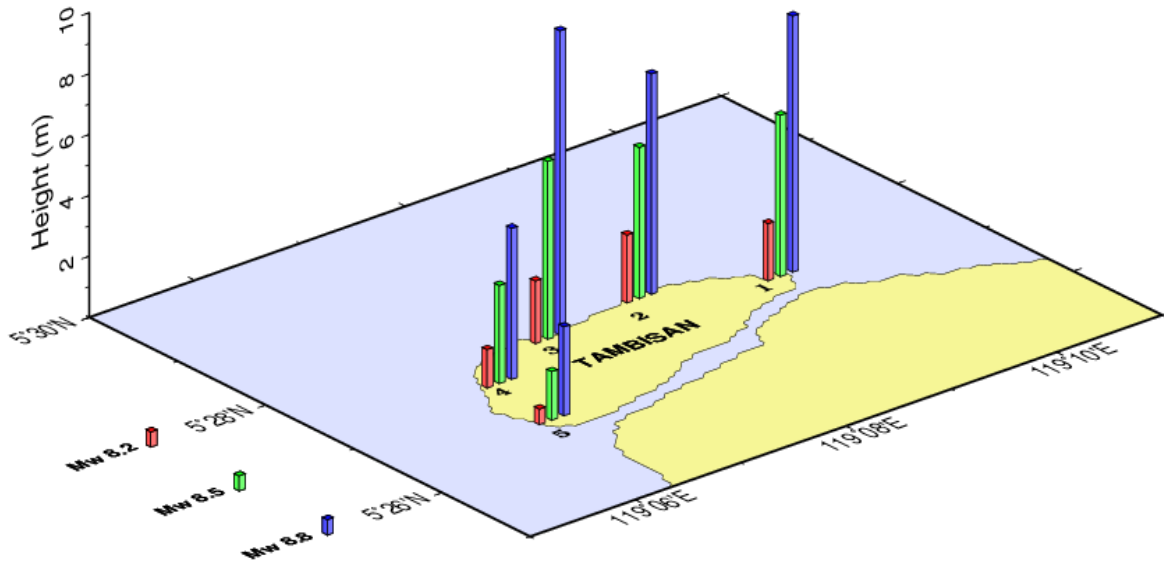
Figure 5. Computed tsunami run-up heights in Tambisan Island for all scenarios.
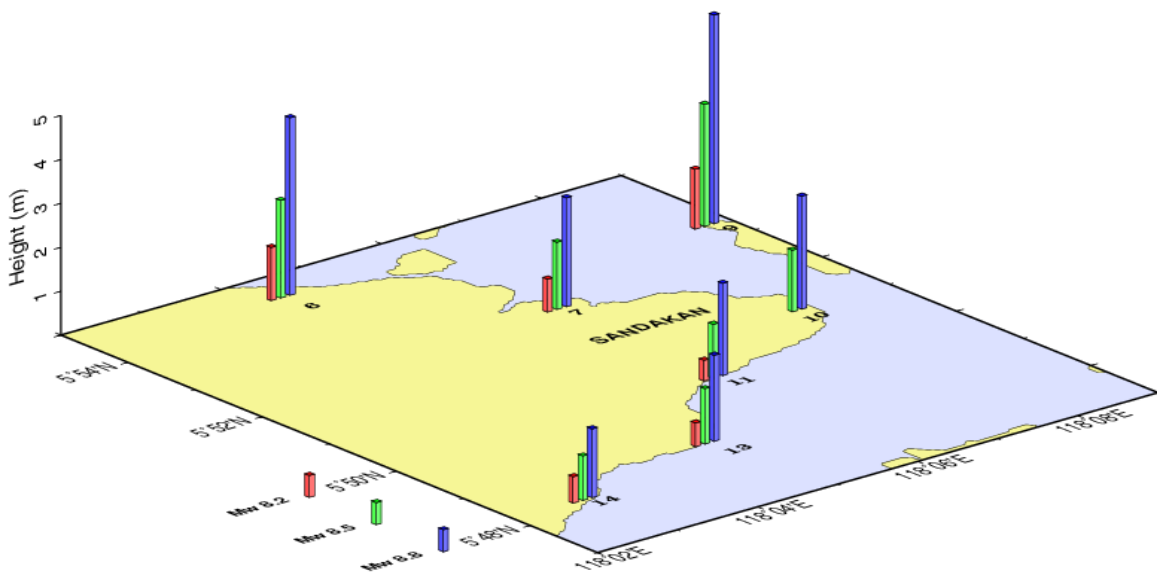

Figure 6. Same as Figure 17, but in Sandakan for all scenarios.

4. Conditions for Computation

Table 3. Computation regions and data used for simulation.

		Latitude	Longitude	Bathymetry	Topography	Spatial grid size	Grid Dimension
Region 1		2°-10°N	115°-123°E	GEBCO 30 arc-seconds	GEBCO 30 arc-seconds	1 arc-min	480 x 420
Region 2		5°-6°30'N	117°30'-119°30'E			20 arc-sec	360 x 270
Region 3	a	5°15'-5°45'N	118°45'-119°20'E			6.66667 arc-sec	315 x 270
	b	5°40'-6°05'N	117°55'-118°20'E				225 x 225
Region 4	a	5°25'-5°30'N	119°03'-119°11'E	Nautical chart	SRTM 3 arc-seconds	2.22222 arc-sec	216 x 315
	b	5°51'-5°55'N	118°03'-118°09'E				162 x 108
	c	5°47'-5°51'N	118°02'-119°08'E				162 x 108

Table 4. Temporal grid size used in the tsunami simulation

Region	Region 1	Region 2	Region 3		Region 4		
			a	b	a	b	c
Δt (sec)	2.00	0.6666	0.2222		0.0740741		