VALIDATION OF THE 2006 JAVA EARTHQUAKE TSUNAMI FOR TSUNAMI HAZARD ASSESSMENT ALONG THE SOUTHERN COAST OF WEST JAVA, INDONESIA
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1. Fault Parameters of Tsunami Sources

Table 1. Fault parameters for Model 1, 2 and 4.

	Model 1	Model 2 (2 sub faults)		Model 4
	from Ammon et al. (2006)	from Ammon et al. (2006) Mo = 7.68E+20 Mw = 7.9		modified from Model 1
Number of fault	1	A	B	1
Mw	7.8	7.5	7.8	8.1
Mo	6.70E+20	1.92E+20	5.76E+20	1.71E+21
Rigidity (Gpa)	10	10	10	10
Lon	108.7	107.5	108.7	108.7
Lat	-10.1	-9.5	-10.1	-10.1
Strike	289	289	289	289
Dip	10	10	10	10
Rake	95	95	95	95
Top of Depth (m)	1000	2700	1000	1000
Slip amount (m)	8	12	8	15
Length (km)	190	40	120	190
Wide (km)	60	40	60	60

Table 2. Fault parameters for Model 3.

|	Model 3 (10 sub faults) from Fujii and Satake (2006) Mo = 7.04E+20 Mw = 7.8				
Number of fault	1	2	3	4	5
Mw	7.0	6.6	7.0	0	7.3
Mo	3.98E+19	1.13E+19	3.83E+19	0	1.03E+20
Rigidity (Gpa)	30	30	30	30	30
Lon	107.274	107.420	107.705	107.851	108.136
Lat	-9.515	-9.096	-9.661	-9.242	-9.807
Strike	289	289	289	289	289
Dip	10	10	10	10	10
Rake	95	95	95	95	95
Top of Depth (m)	3000	11700	3000	11700	3000
Slip amount (m)	0.53	0.15	0.51	0.00	1.38
Length (km)	50	50	50	50	50
Wide (km)	50	50	50	50	50
Number of fault	6	7	8	9	10
Mw	7.1	7.3	0	7.4	7.4
Mo	5.93E+19	1.073E+20	0	1.85E+20	1.59E+20
Rigidity (Gpa)	30	30	30	30	30
Lon	108.282	108.568	108.714	109.000	109.146
Lat	-9.388	-9.953	-9.534	-10.100	-9.681
Strike	289	289	289	289	289
Dip	10	10	10	10	10
Rake	95	95	95	95	95
Top of Depth (m)	11700	3000	11700	3000	11700
Slip amount (m)	0.79	1.43	0.00	2.47	2.12
Length (km)	50	50	50	50	50
Wide (km)	50	50	50	50	50
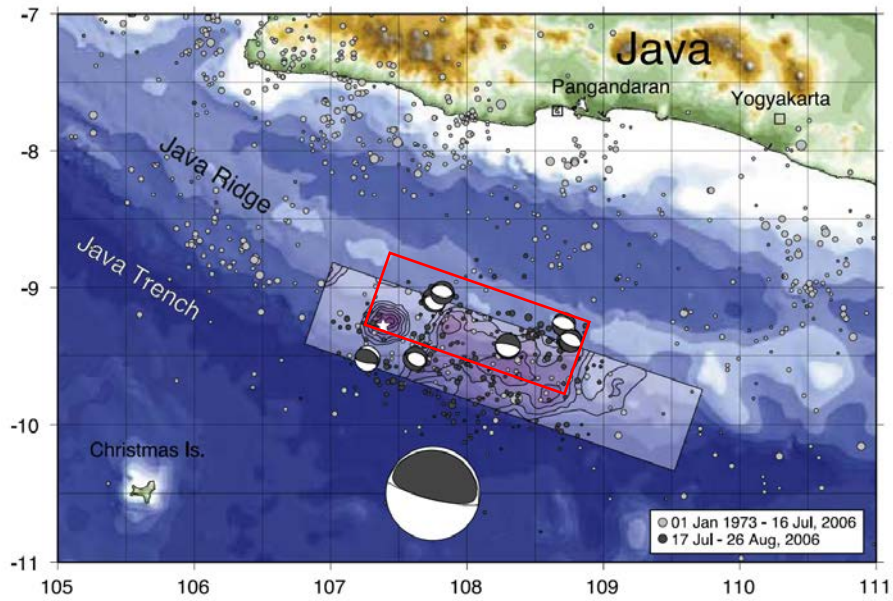
Figure 1. Fault location of Model 1, uniform slip model of 8 m.

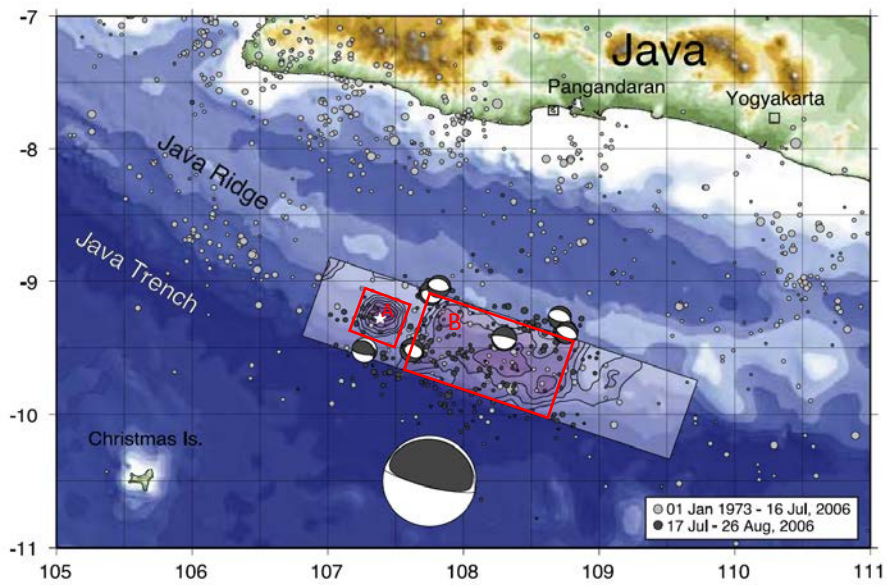Original figure on background is from Ammon et al. (2006).

Figure 2. Fault location of two sub fault models of 12 m and 8 m for Model 2.

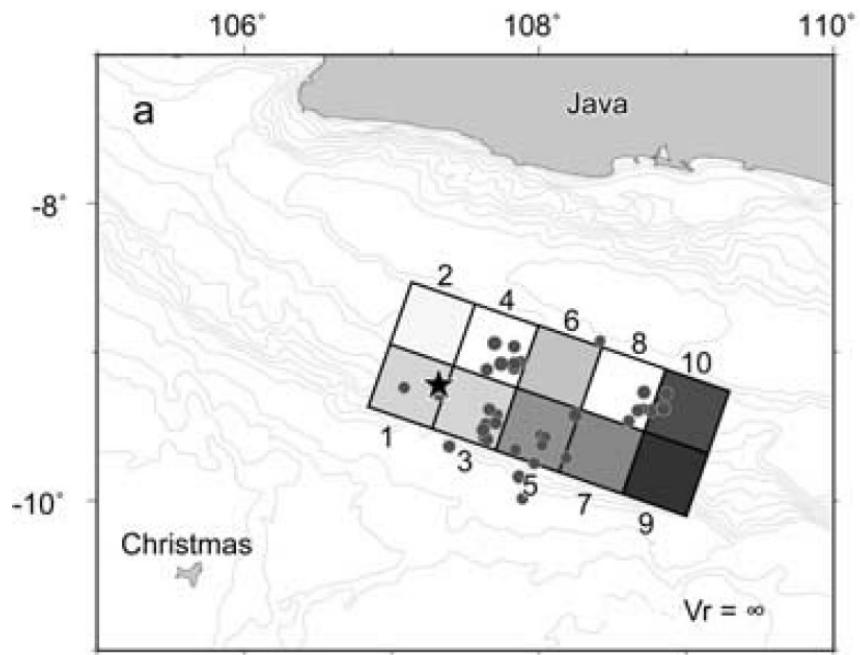Original figure on background is from Ammon et al. (2006).

Figure 3. Fault location of 10 sub fault models for Model 3 estimated by
inversion of tide gauge assumed by Fujii and Satake (2006).

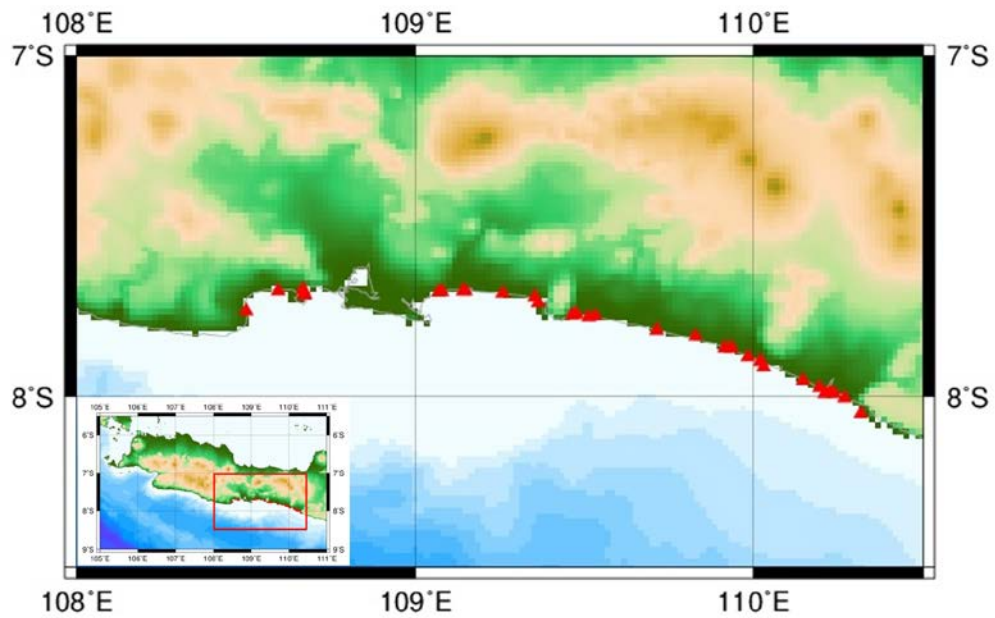## 2. Locations of assumed coastal point

Figure 4. Assumed coastal points for computation.

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Table 3. Locations of the assumed coastal points in Layer 2.

No.	Lon (°E)	Lat (°S)	No.	Lon (°E)	Lat (°S)
1	108.673	-7.70203	17	110.217	-7.98408
2	108.667	-7.69966	18	110.194	-7.97425
3	108.662	-7.69419	19	110.148	-7.95157
4	108.501	-7.74854	20	110.077	-7.91542
5	108.592	-7.68058	21	110.034	-7.90143
6	109.08	-7.68949	22	109.975	-7.87931
7	109.068	-7.69300	23	109.913	-7.85635
8	109.144	-7.68898	24	109.913	-7.85635
9	109.141	-7.68900	25	109.795	-7.82321
10	109.258	-7.69774	26	109.795	-7.82321
11	109.336	-7.70583	27	109.716	-7.80481
12	109.364	-7.72478	28	109.518	-7.76467
13	110.312	-8.02851	29	109.518	-7.76467
14	110.253	-8.00062	30	109.471	-7.75733
15	110.239	-7.99091	31	109.467	-7.75792
16	110.239	-7.99091			

Table 4. Locations of the assumed coastal points in Layer 3.

| No.	Lon (°E)	Lat (°S)	No.	Lon (°E)	Lat (°S)
1	108.667	-7.70142	17	110.217	-7.98795
2	108.649	-7.69953	18	110.193	-7.97417
3	108.645	-7.69349	19	110.151	-7.95196
4	108.504	-7.74798	20	110.063	-7.91542
5	108.591	-7.68204	21	110.029	-7.89904
6	109.08	-7.69016	22	109.983	-7.88004
7	109.068	-7.69357	23	109.913	-7.85417
8	109.141	-7.68896	24	109.913	-7.85417
9	109.144	-7.68916	25	109.795	-7.82322
10	109.265	-7.69835	26	109.795	-7.82322
11	109.321	-7.70836	27	109.704	-7.80465
12	109.388	-7.72502	28	109.516	-7.7649
13	110.334	-8.02596	29	109.516	-7.7649
14	110.248	-8.00093	30	109.473	-7.75735
15	110.226	-7.99095	31	109.471	-7.75791
16	110.226	-7.99095			
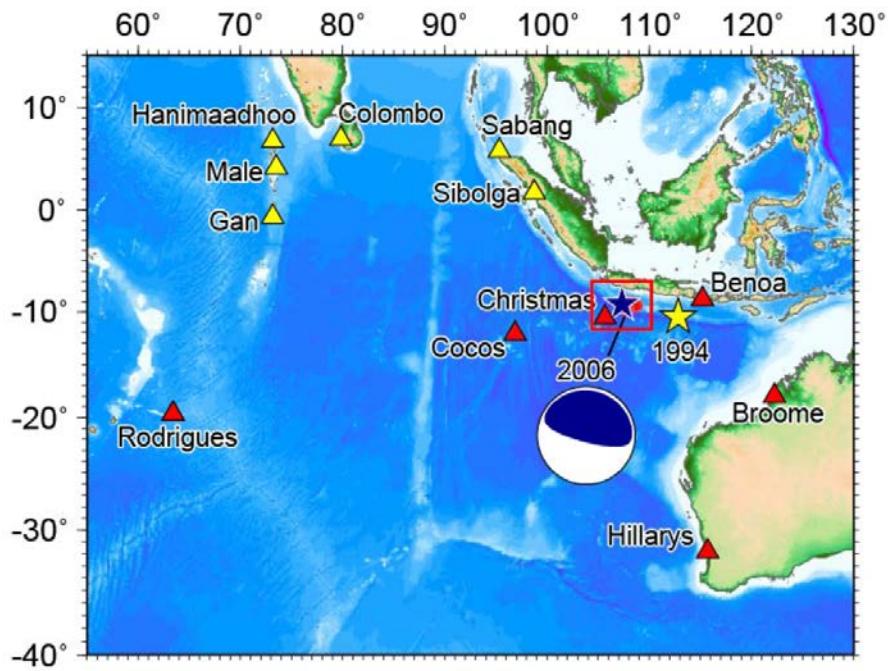
Figure 5. Location of available tide gauge stations. Original figure from Fujii and Satake (2006). Only Christmas station was considered in this study. In this study we referred the result of field survey measurements of the 17 July 2006 Java tsunami from Tsuji team .
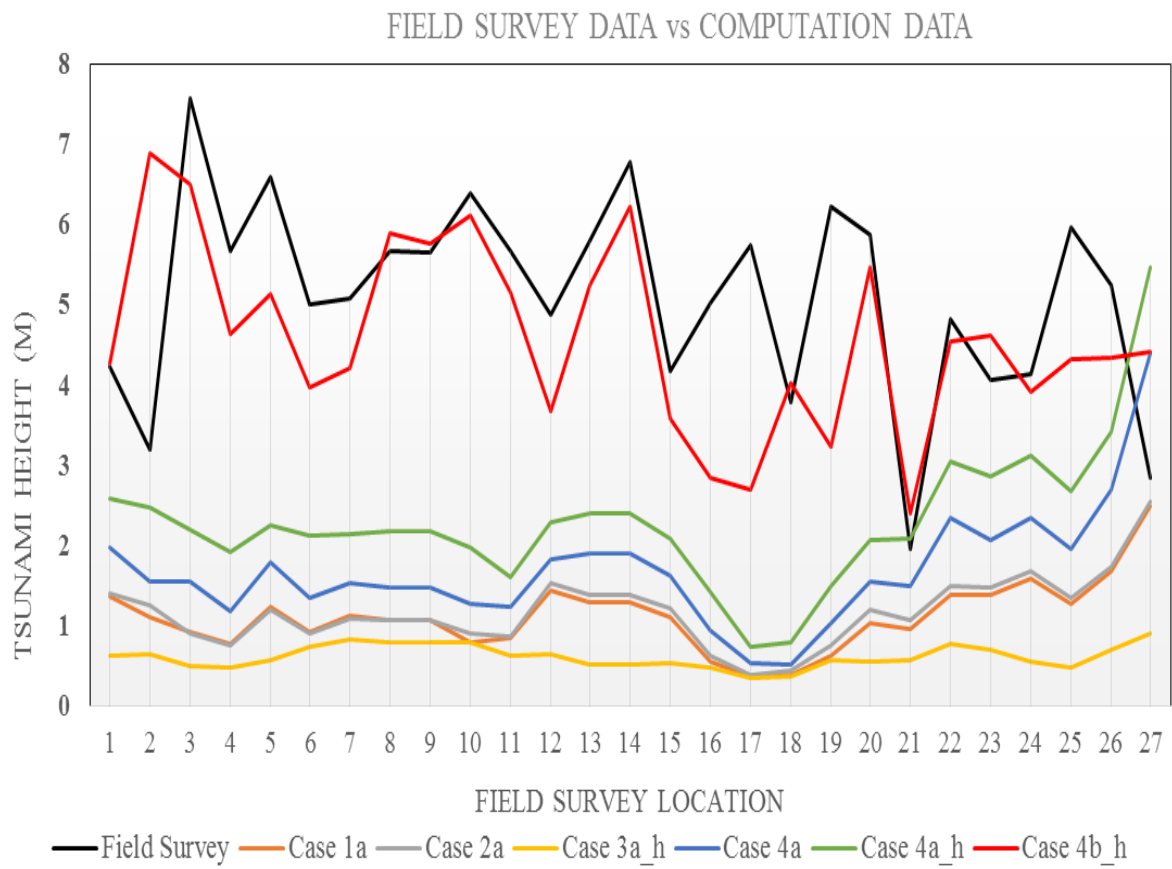
3. Results (Tsunami Heights)

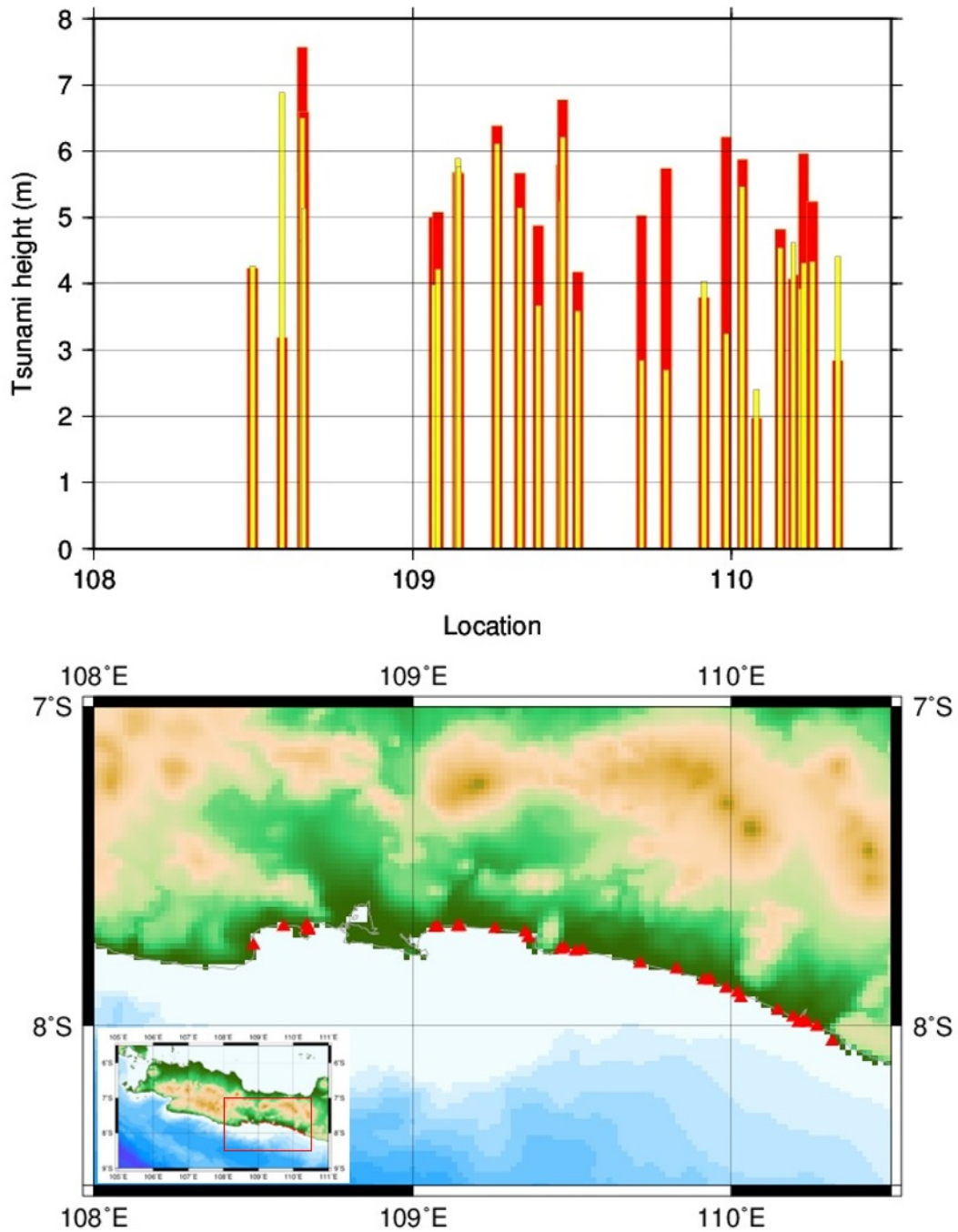Figure 6. Comparison chart of field survey data and computation result.

Figure 7. Tsunami height comparison of field survey data and computation
result. Red triangles in the map indicate assumed coastal points.
Red bars in the graph indicate the 2006 Java tsunami field survey data,
yellow bars indicate computational result.

4. Conditions for Computation

Table 5. Computational Layers

Layer	Latitude	Longitude	grid size	nx	ny	Bathymetry / Topography
1	5°S - 14°S	104°E - 115°E	1'	661	541	GEBCO 1'
2	6.5°S - 8.5°S	105°E - 110.5°E	0.33333'	991	361	GEBCO 1'
3	7.5°S - 8.25°S	107.5°E - 110.5°E	0.11111'	1621	406	GEBCO 30"
4	7.65°S - 7.78°S	108.58°E - 108.73°E	0.03704'	243	216	GEBCO 30"+SRTM3"

Table 6. Cases of tsunami computation.

Source Model	1	2	3	4	
(a) 2 Layers Minimum grid size 0.33333'	1a	2a	3a_h	4a	4a_h
(b) 3 Layers Minimum grid size 0.11111'					4b_h
(c) 4 Layers Minimum grid size 0.03704'					4c_h

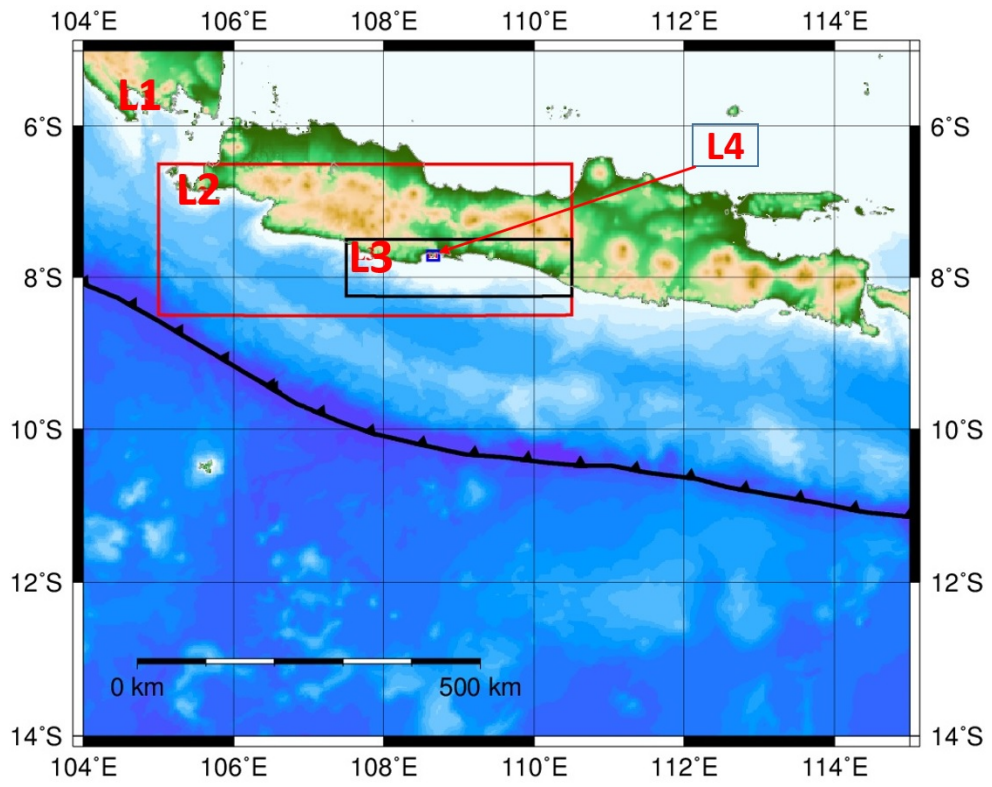h: including the effect of horizontal deformation (Tanioka and Satake, 1996).

Figure 8. Computation area of four layers with a nesting grid system.