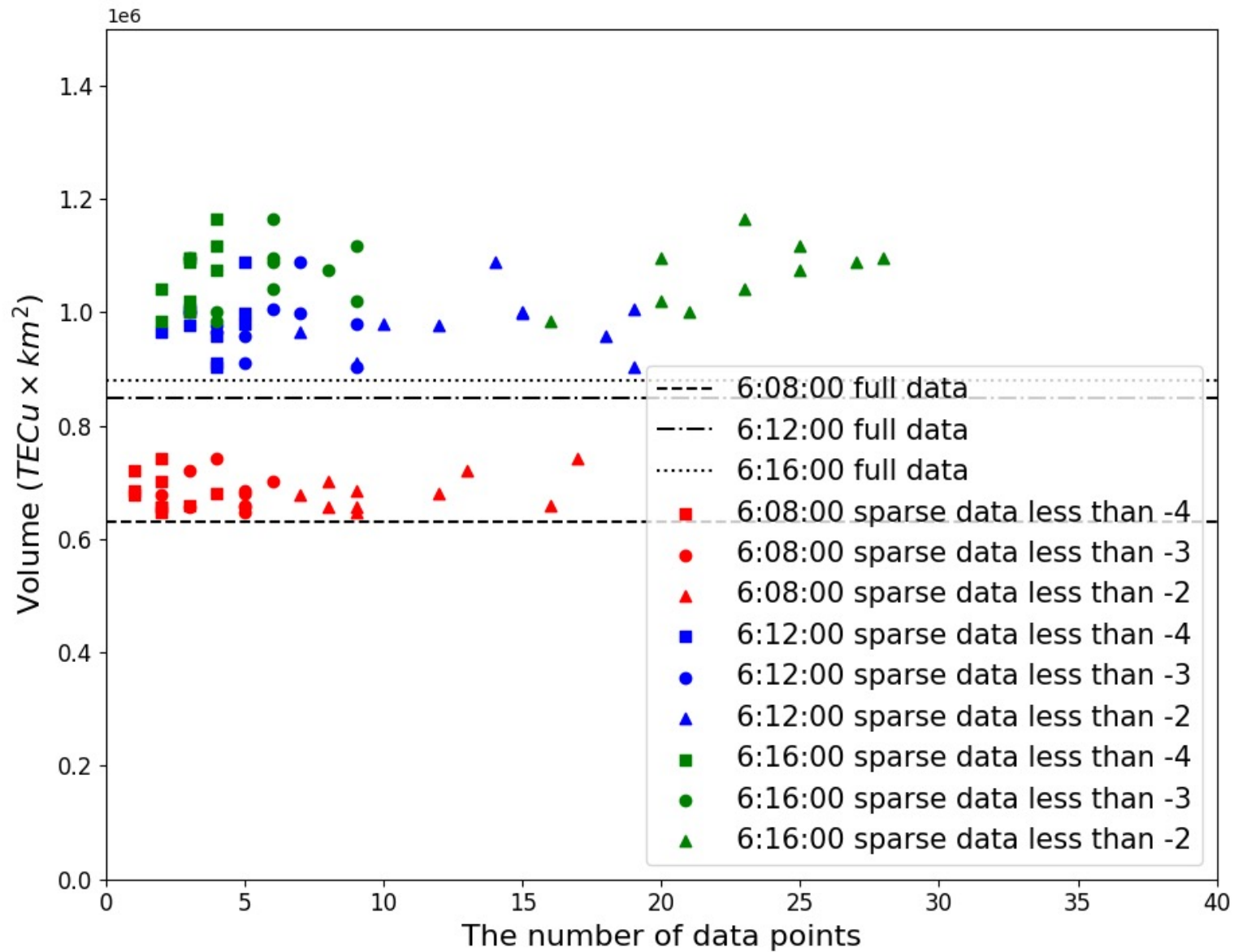
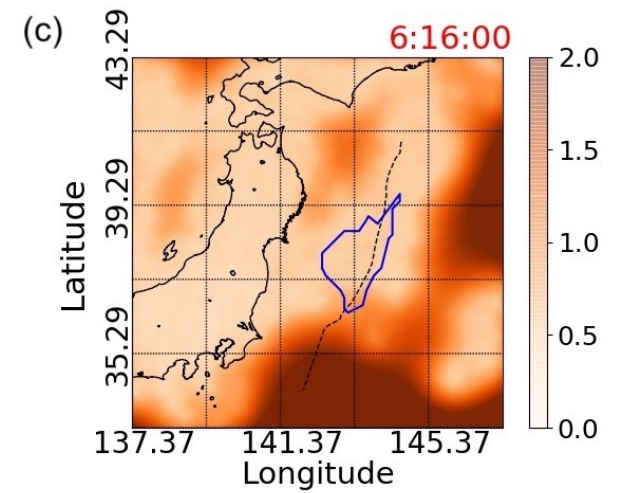
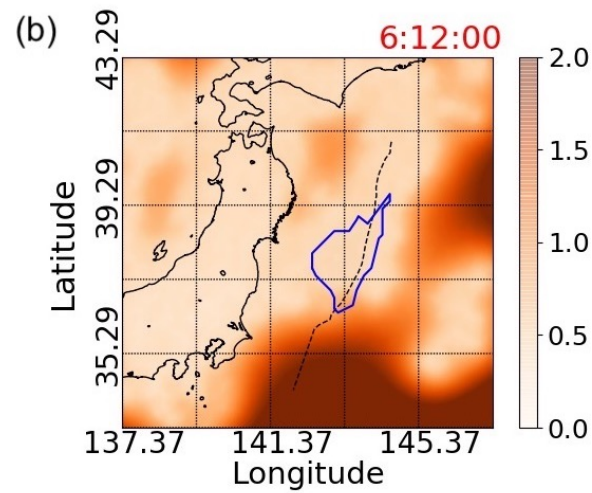
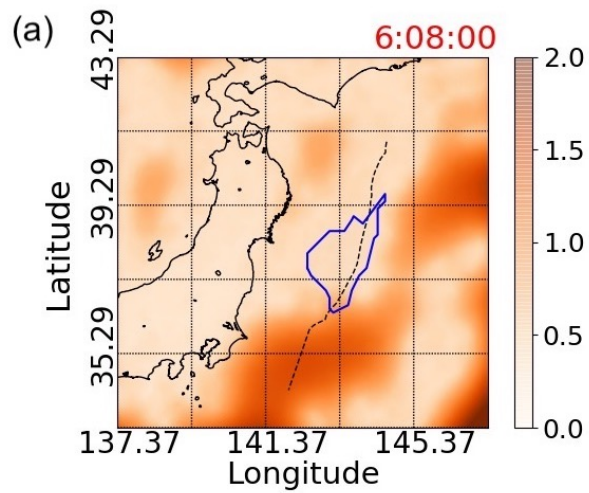


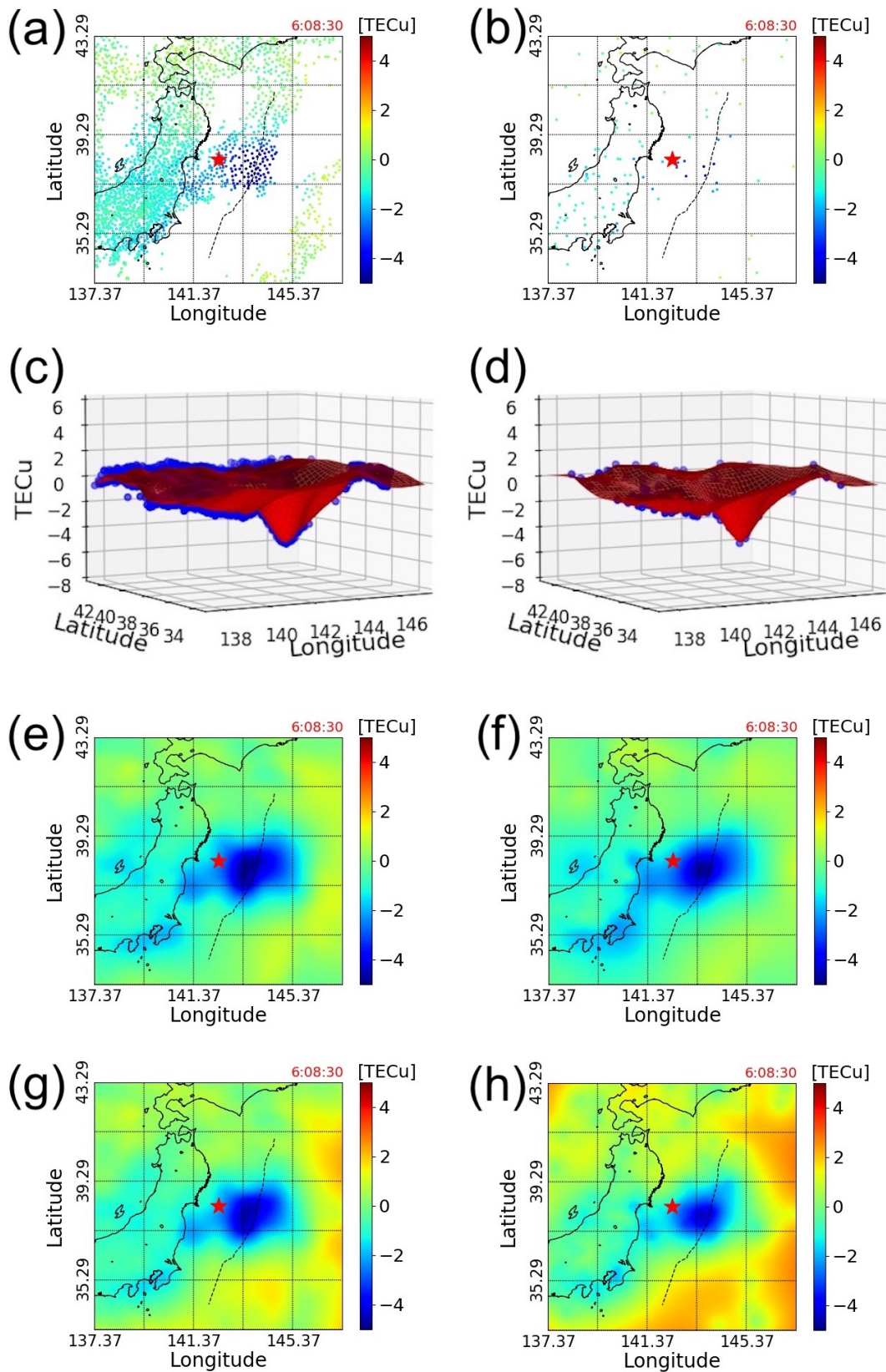
	At 06:08:00		At 06:12:00		At 06:16:00	
	Minimum observed	Receiver number at which the minimum is observed	Minimum observed	Receiver number at which the minimum is observed	Minimum observed	Receiver number at which the minimum is observed
full	-4.95	0043	-5.57	3011	-5.19	0589
random 1	-4.95	0043	-5.41	0043	-4.89	0043
random 2	-4.78	3007	-5.26	3007	-4.70	3007
random 3	-4.73	0951	-5.17	0951	-4.94	0592
random 4	-4.41	3016	-5.13	3016	-4.63	3016
random 5	-4.63	3005	-5.49	3005	-5.04	3005
random 6	-4.88	0950	-5.48	0950	-4.98	0950
random 7	-4.87	3001	-5.43	3001	-4.94	0587
random 8	-4.71	0587	-5.36	0587	-4.94	0587
random 9	-4.22	0215	-4.74	0212	-4.14	0212
random 10	-4.35	0582	-5.04	3023	-4.47	3032



Comparison of the volume of TIH calculated by sparse data (40 receivers) and the volume calculated using all data. Random choices are independently implemented 10 times. Points with square marks indicate the number of data points with a TEC value of -4 or less and computed volume of TIH, round marks triangular marks indicate those of -3 or less and -2 or less respectively. The red color shows the data at 06:08:00. Also, blue and green are at 06:12:00 and 06:16:00 respectively. The horizontal lines show the volumes calculated using all the data at 06:08:00, 06:12:00, and 06:16:00.



Uncertainty of the estimated TEC values at 6:08:00, 6:12:00, and 6:16:00. The uncertainty in this case is defined as 3 times the standard deviation. The area surrounded by the blue line is the simulated initial tsunami by inversion analysis with 130 small basis functions implemented by Saito et al. (2011b). The black dashed line indicates the Japan Trench.



Left-hand side is for the full data and right-hand side is for the sparse data using only 5% of the GEONET receivers. (a) and (b) are measured TEC data. (c) and (d) are measured TEC data (blue dots) and the fitting surface (red surface). (e) and (f) are 2D projection of the fitting surface. (g) and (h) are 2D projection of the 99% one-sided confidence interval of the fitting surface. The fitting surface is computed using the INLA-SPDE method. The black dashed line indicates the Japan Trench.