

Table S1 Events used in this study and analysis results

NEIC Origin time	Event	Latitude (deg)	Longitude (deg)	Depth (km)	MwCMT	this study					L50 Classification				
						Type*	Mwpd (raw)	Mwp	T0 (sec)	I_t	L50 (range)	L100	Correct	Missed	False
1992.09.02 00:15	Nicaragua	11.74	-87.34	44.0	7.6	T	7.5	7.2	222	17	2.1 (1.5-4.0)	1.8	X	-	-
1992.12.12 05:29	Flores Indonesia	-8.48	121.90	49.0	7.7	P	7.8	7.5	100	19	2.5 (2.5-2.5)	0.9	X	-	-
1993.07.12 13:17	Hokkaido	42.85	139.20	18.0	7.7	P	7.8	7.5	87	18	1.4 (0.8-2.5)	0.9	X	-	-
1994.06.02 18:17	Java	-10.48	112.84	6.0	7.7	T	7.5	7.5	111	16	2.0 (1.4-2.6)	1.3	X	-	-
1994.10.04 13:23	Kuril (Shikotan)	43.77	147.32	61.0	8.3	P	8.2	8.1	67	4	1.3 (0.5-1.7)	0.6	X	-	-
1994.11.14 19:15	Philippines	-13.52	121.07	14.0	7.1	So	7.1	0.0	38	13	0.9 (0.8-1.5)	0.5	-	X	-
1995.07.30 05:11	Chile	-23.34	-70.29	9.0	8.0	I	7.8	7.6	101	7	2.8 (1.4-3.8)	2.4	X	-	-
1995.10.09 15:35	Mexico	19.06	-104.21	4.0	8.0	I	7.7	7.4	77	7	1.5 (1.0-2.1)	0.7	X	-	-
1995.12.03 18:01	Kuril	44.66	149.30	23.0	7.9	I	7.6	7.4	61	2	1.8 (1.1-2.1)	0.7	X	-	-
1996.02.17 05:59	Irian Jaya	-0.89	136.95	11.0	8.2	I	7.9	7.8	112	11	2.4 (1.6-3.1)	1.8	X	-	-
1996.02.21 12:51	Peru	-9.59	-79.59	4.0	7.5	T	7.3	7.0	104	8	1.6 (1.1-2.5)	1.1	X	-	-
1997.12.05 11:26	Kamchatka	54.84	162.03	33.0	7.8	I	7.7	7.5	68	3	1.4 (0.7-1.9)	0.5	X	-	-
1998.07.17 08:49	Papua New Guinea	-2.96	141.93	7.0	7.0	I	7.0	6.8	61	14	1.1 (0.3-5.1)	0.6	X	-	-
1999.08.17 00:01	Turkey	40.75	29.86	13.0	7.6	S	7.5	7.3	68	7	1.1 (0.8-1.9)	0.6	X	-	-
2000.05.04 04:21	Sulawesi	-1.105	123.573	6.0	7.5	So	7.6	7.3	77	6	1.0 (0.8-1.2)	0.4	X	-	-
2000.11.16 04:54	New Ireland	-3.98	152.16	33.0	8.0	I	7.8	7.5	137	3	5.1 (3.4-5.1)	4.3	X	-	-
2000.11.17 21:01	New Britain	-5.50	151.78	37.0	7.8	I	7.6	7.5	76	0	2.5 (0.9-2.7)	1.1	-	-	X
2001.06.23 20:33	Peru	-16.27	-73.64	8.0	8.4	I	8.0	7.8	156	11	2.6 (1.9-3.6)	3.1	X	-	-
2002.03.05 21:16	Philippines	6.03	124.24	31.0	7.5	I	7.4	7.2	70	3	1.2 (0.8-1.7)	0.6	X	-	-
2002.09.08 18:44	Papua New Guinea	-3.23	142.87	33.0	7.6	I	7.5	7.4	46	3	1.0 (0.7-3.0)	0.5	X	-	-
2002.10.10 10:50	Indonesia	-1.71	134.17	10.0	7.5	So	7.7	7.3	127	6	1.5 (0.8-1.9)	1.0	X	-	-
2003.01.22 02:06	Mexico	18.84	-103.82	24.0	7.5	I	7.4	7.4	28	2	1.1 (0.6-1.3)	0.5	X	-	-
2003.05.21 18:44	N Algeria	36.96	3.63	9.0	6.8	R	6.9	6.7	23	8	0.7 (0.5-1.0)	0.4	-	X	-
2003.09.25 19:50	Hokkaido	41.82	143.91	13.0	8.3	I	8.0	7.9	82	3	2.5 (1.8-3.7)	1.2	X	-	-
2003.11.17 06:43	Rat Islands	51.15	178.65	5.0	7.7	I	7.5	7.4	74	1	1.4 (0.9-2.1)	0.6	-	-	X
2004.11.11 21:26	Timor	-8.17	124.86	10.0	7.5	I	7.5	7.3	52	0	1.1 (0.9-1.8)	0.5	-	-	X
2004.11.26 02:25	Papua Indonesia	-3.57	135.35	10.0	7.1	P	7.2	7.0	25	0	0.8 (0.7-2.1)	0.5	X	-	-
2004.11.28 18:32	Hokkaido	43.00	145.06	39.0	7.0	I	7.1	7.1	18	1	0.8 (0.4-1.4)	0.4	X	-	-
2004.12.23 14:59	Macquarie	-49.31	161.35	35.0	8.1	So	7.8	7.7	63	1	1.4 (0.9-2.6)	0.8	-	-	X
2004.12.26 00:58	Sumatra-Andaman	3.30	95.98	39.0	9.3	IT?	8.6	8.2	454	18	2.3 (1.6-3.1)	3.5	X	-	-
2005.03.28 16:09	N Sumatra (Nias)	2.09	97.11	21.0	8.6	I	8.2	8.1	108	5	5.1 (2.2-5.1)	2.8	X	-	-
2005.06.15 02:50	N California	41.284	-125.983	10.0	7.2	So	7.1	6.9	35	1	0.8 (0.5-1.2)	0.4	X	-	-
2005.07.24 15:42	Nicobar	7.92	92.19	16.0	7.2	So	7.2	7.0	33	0	0.8 (0.5-1.2)	0.4	X	-	-
2005.08.16 02:46	Honshu	38.28	142.04	36.0	7.2	I	7.3	7.1	54	1	0.6 (0.4-0.8)	0.3	X	-	-
2005.11.14 21:38	E Honshu	38.10	144.93	11.0	7.0	P	7.1	6.9	19	1	0.5 (0.4-0.6)	0.2	X	-	-
2006.01.02 06:10	South Sandwich Islan	-60.81	-21.47	10.0	7.4	So	7.3	7.1	43	0	0.7 (0.3-5.1)	0.3	X	-	-
2006.01.08 11:34	S Greece	36.30	23.36	66.0	6.7	I	7.0	0.0	25	0	0.8 (0.5-1.1)	0.5	X	-	-
2006.03.14 06:57	Seram Indonesia	-3.59	127.21	30.6	6.7	So	6.8	6.1	17	9	0.4 (0.3-0.6)	0.2	-	X	-
2006.04.20 23:25	Koryakia	61.08	167.09	22.0	7.6	Ro	7.5	7.3	38	0	0.9 (0.6-1.1)	0.3	X	-	-
2006.05.03 15:26	Tonga	-20.13	-174.16	55.0	8.0	W	7.9	7.7	45	1	1.0 (0.8-2.4)	2.1	-	-	X
2006.07.17 08:19	Indonesia	-9.25	107.41	34.0	7.7	T	7.5	7.1	180	19	2.0 (1.5-2.3)	1.8	X	-	-
2006.08.20 03:41	Scotia Sea	-61.01	-34.39	10.0	7.0	So	6.9	6.7	17	0	0.3 (0.2-2.0)	0.3	X	-	-
2006.11.15 11:14	Kuril	46.68	153.22	27.7	8.3	I	7.9	7.7	124	4	5.1 (1.8-5.1)	3.3	X	-	-
2006.12.26 12:26	Taiwan	21.83	120.54	10.0	6.9	P	7.0	6.8	19	1	0.5 (0.4-1.1)	0.2	X	-	-
2007.01.13 04:23	Kuril	46.29	154.45	10.0	8.1	P	8.0	7.8	88	1	1.6 (1.0-2.6)	1.0	-	-	X
2007.01.21 11:27	Molucca Sea	1.24	126.40	22.0	7.5	P?	7.4	7.2	37	0	0.7 (0.4-1.0)	0.3	X	-	-
2007.01.30 04:54	Macquarie	-54.89	145.73	10.0	6.8	So	6.7	6.6	17	0	0.5 (0.3-0.6)	0.2	X	-	-
2007.03.25 00:40	Vanuatu	-20.62	169.36	40.0	7.1	I	7.3	7.1	30	1	0.7 (0.5-1.0)	0.3	X	-	-
2007.03.25 00:41	Honshu	37.28	-136.60	5.0	6.7	P	7.2	6.9	60	1	0.5 (0.4-0.7)	0.2	X	-	-
2007.04.01 20:39	Solomon Islands	-8.45	156.96	10.0	8.1	I	8.0	7.7	124	13	3.0 (2.4-4.0)	2.4	X	-	-
2007.07.26 05:40	Molucca Sea	2.82	127.48	25.0	6.9	P	7.1	7.0	27	0	0.7 (0.5-1.2)	0.3	X	-	-
2007.08.15 23:40	Peru	-13.36	-76.52	30.2	8.0	I	7.9	7.7	164	2	1.8 (0.8-2.5)	2.3	X	-	-
2007.09.02 01:05	Santa Cruz Islands	-11.57	165.81	35.0	7.2	I	7.4	7.1	73	1	0.8 (0.7-1.4)	0.4	X	-	-
2007.09.10 01:49	Columbia	2.95	-78.07	10.0	6.8	P	7.0	6.8	33	0	0.6 (0.5-0.9)	0.3	X	-	-
2007.09.12 11:10	Indonesia	-4.52	101.38	30.0	8.4	I	8.2	7.9	132	3	2.6 (1.7-4.4)	2.1	X	-	-
2007.09.12 23:49	Indonesia	-2.53	100.96	10.0	7.9	WI?	7.9	7.8	134	0	1.5 (1.0-2.0)	1.5	-	-	X
2007.09.13 03:25	Indonesia	-2.22	99.56	10.0	7.0	I	7.3	7.1	33	0	0.9 (0.4-1.5)	0.4	X	-	-
2007.09.30 05:23	Auckland Islands	-49.42	163.84	11.0	7.4	Ro	7.4	7.2	48	1	1.0 (0.7-1.7)	0.5	-	-	X
2007.10.24 21:02	S Sumatra	-3.84	100.91	30.0	6.8	I	7.0	6.9	29	0	0.8 (0.5-1.1)	0.4	X	-	-
2007.11.14 15:40	N Chile	-22.19	-69.84	60.0	7.7	W	7.8	7.6	87	1	2.1 (1.3-5.1)	1.7	-	-	X
2007.12.19 09:30	Andreanof Islands	51.50	-179.47	56.3	7.1	W	7.1	6.9	28	0	0.8 (0.6-1.0)	0.4	X	-	-
2008.02.08 09:38	N Mid-Atlantic Ridge	10.73	-41.88	10.0	6.9	So	6.8	6.7	15	0	0.6 (0.3-0.7)	0.2	X	-	-
2008.02.14 10:09	S Greece	36.65	21.83	29.0	6.9	I	7.1	6.9	64	0	1.2 (0.7-1.7)	0.7	-	-	X
2008.02.20 08:08	N Sumatra	2.75	95.97	34.3	7.4	I	7.4	7.3	65	0	1.4 (0.9-1.7)	0.6	-	-	X
2008.02.25 08:36	S Sumatra	2.35	100.02	35.0	6.9	I	7.3	7.2	40	1	0.9 (0.5-1.1)	0.4	X	-	-
2008.04.09 08:36	Loyalty Islands	-20.09	168.85	33.0	7.3	I	7.3	7.2	23	0	0.7 (0.5-1.0)	0.4	X	-	-
2008.04.12 00:30	Macquarie Islands	-55.68	158.53	10.0	7.1	I	7.2	7.1	20	0	0.5 (0.5-1.1)	0.3	X	-	-

2008.09.29 15:19	Kermadec	-29.75	-177.68	36.0	7.0	W	7.1	7.0	20	0	0.4 (0.3-0.6)	0.4	X	-	-
2008.11.16 17:02	Sulawesi	1.29	122.10	26.1	7.3	I	7.4	7.2	54	0	1.0 (0.8-1.2)	0.4	-	-	X
2008.12.09 06:24	Kermadec	-31.09	-176.97	18.0	6.7	P	6.9	6.8	20	0	0.7 (0.5-0.8)	0.2	X	-	-
2009.01.03 19:43	Papua Indonesia	-0.51	132.78	35.0	7.6	I	7.6	7.4	46	1	1.0 (0.6-1.4)	0.5	-	-	X
2009.01.03 22:33	Papua Indonesia	-0.70	133.28	35.0	7.4	I	7.5	7.4	39	0	0.6 (0.4-1.0)	0.3	X	-	-
2009.01.15 07:27	Loyalty Islands	-22.44	170.50	51.8	6.6	I	6.7	6.7	22	0	0.6 (0.5-0.8)	0.3	X	-	-
2009.01.15 17:49	Kuril Islands	46.86	155.15	36.0	7.4	P	7.6	7.5	48	0	0.8 (0.4-1.4)	0.4	X	-	-
2009.02.11 17:34	Talau Indonesia	3.90	126.40	20.0	7.1	?	7.3	7.2	31	0	0.6 (0.5-0.9)	0.3	X	-	-
2009.02.18 21:53	Kermadec	-27.42	-176.42	25.0	6.9	I	7.1	7.0	17	0	0.5 (0.3-0.9)	0.2	X	-	-

\* Earthquake type: I - interplate thrust; T - tsunami earthquake; W - downdip; P - intraplate; So - strike-slip oceanic; Ro - reverse-faulting oceanic; S - strike-slip continental; R - reverse-faulting continental.  
MwCMT=9.3 for 2004.12.26 Sumatra-Andaman from: Tsai, V. C., M. Nettles, G. Ekstrom, and A. M. Dziewonski (2005). Multiple CMT source analysis of the 2004 Sumatra earthquake, Geophys. Res. Lett., 32, L17304, doi:10.1029/2005GL023813.