APPENDIX A

Table A1 Radon concentration at 50-cm depth.

Time period	Week	Radon concentration at 50-cm depth (tracks/cm^2/week)					
		site-2	site-4	site-6	site-8	site-10	Average
29/9/96 - 5/10/96	1	7469	3052	5047	3689	7049	5264
6/10/96 - 12/10/96	2	8974	3073	7084	5698	7777	6524
13/10/96 - 19/10/96	3	8078	3710	5390	4228	5082	5299
20/10/96 - 26/10/96	4	8260	7728	8407	7175	7966	7910
27/10/96 - 2/11/96	5	6440	5292	7189	6909	7903	6748
3/11/96 - 9/11/96	6	12047	5866	10311	6664	10178	9016
10/11/96 - 16/11/96	7	9436	3850	5453	6573	9625	6986
17/11/96 - 23/11/96	8	7301	5439	5390	8456	8295	6979
24/11/96 - 30/11/96	9	8561	4515	7784	5572	9800	7245
1/12/96 - 7/12/96	10	7574	6566	7882	7861	9401	7854
8/12/96 - 14/12/96	11	6965	5320	7007	5936	9401	6923
15/12/96 - 21/12/97	12	4648	7000	7455	5131	6958	6237
22/12/96 - 28/12/96	13	5922	3843	6356	5418	6552	5621
29/12/96 - 4/1/97	14	7070	4753	7784	6034	5789	6286
5/1/97 - 11/1/97	15	4767	3192	3633	3444	4123	3829
12/1/97 - 18/1/97	16	6230	2975	4081	4858	5124	4655
19/1/97 - 25/1/97	17	3640	3276	4424	3668	4361	3871
26/1/97 - 1/2/97	18	5124	2282	5292	5565	6636	4977
2/2/97 - 8/2/97	19	4228	3227	2905	3234	4109	3542
9/2/97 - 15/2/97	20	4914	5068	4760	7903	5215	5572
16/2/97 - 22/2/97	21	5775	4669	7490	5628	7301	6174
23/2/97 - 1/3/97	22	6692	3626	6853	5642	3150	5194
2/3/97 - 8/3/97	23	6027	4543	7602	6027	6293	6097

Table A1 (continued)

Time period	Week	Radon concentration at 50-cm depth (tracks/cm^2/week)					
		site-2	site-4	site-6	site-8	site-10	Average
9/3/97 - 15/3/97	24	4830	3430	4011	5061	5628	4592
16/3/97 - 22/3/97	25	6482	6349	4172	5152	3101	5194
23/3/97 - 29/3/97	26	6132	4060	8540	4697	6286	5943
30/3/97 - 5/4/97	27	8757	7798	7784	8253	7399	8001
6/4/97 - 12/4/97	28	3682	4025	4991	5551	5705	4795
13/4/97 - 19/4/97	29	3248	4074	4606	5628	5726	4655
20/4/97 - 26/4/97	30	5593	3500	4935	3927	4900	4571
27/4/97 - 3/5/97	31	5110	4823	6349	4655	6461	5481
4/5/97 - 10/5/97	32	1995	1806	1078	2128	4907	2380
11/5/97 - 17/5/97	33	5061	4193	5040	5047	5467	4963
18/5/97 - 24/5/97	34	3815	4725	4242	5285	5250	4662
25/5/97 - 31/5/97	35	6909	4144	6741	5474	6881	6027
1/6/97 - 7/6/97	36	4970	7000	6125	5824	7343	6251
8/6/97 - 14/6/97	37	3920	3010	2611	3822	4109	3493
15/6/97 - 21/6/97	38	4984	4641	5586	6734	4095	5208
22/6/97 - 28/6/97	39	4998	2219	3444	3353	3710	3542
29/6/97 - 5/7/97	40	5845	3073	6300	5495	4851	5110

Table A2 Radon concentration at 100-cm depth.

Time period	Week	Radon concentration at 100-cm depth (tracks/cm^2/week)					
		site-1	site-3	site-5	site-7	site-9	Average
29/9/96 - 5/10/96	1	9436	9569	9499	10815	9898	9842
6/10/96 - 12/10/96	2	7518	8715	7721	10465	7028	8288
13/10/96 - 19/10/96	3	11165	16569	8939	10332	9856	11375
20/10/96 - 26/10/96	4	19159	12719	14049	19572	12684	15638
27/10/96 - 2/11/96	5	10927	13027	13951	13111	16625	13524
3/11/96 - 9/11/96	6	11214	10773	14434	15456	17780	13930
10/11/96 - 16/11/96	7	14714	14791	16436	9618	13685	13846
17/11/96 - 23/11/96	8	12432	11816	11109	10290	12285	11585
24/11/96 - 30/11/96	9	12110	14665	12670	12901	10941	12656
1/12/96 - 7/12/96	10	16205	16695	17598	14560	13867	15785
8/12/96 - 14/12/96	11	17094	15435	10626	10164	11578	12978
15/12/96 - 21/12/97	12	10472	16555	11361	10927	14105	12684
22/12/96 - 28/12/96	13	10066	14714	14406	11760	12719	12733
29/12/96 - 4/1/97	14	16009	15827	13776	13286	8960	13573
5/1/97 - 11/1/97	15	9198	11634	8519	5901	7966	8645
12/1/97 - 18/1/97	16	7049	8477	10983	8155	8015	8540
19/1/97 - 25/1/97	17	6160	7707	10724	6293	8932	7966
26/1/97 - 1/2/97	18	9744	5908	6734	6594	6433	7084
2/2/97 - 8/2/97	19	7070	6734	9730	5803	5677	7000
9/2/97 - 15/2/97	20	10080	8183	9044	9422	9002	9149
16/2/97 - 22/2/97	21	10850	8169	10465	9436	12530	10290
23/2/97 - 1/3/97	22	7322	3969	5124	5817	4207	5285
2/3/97 - 8/3/97	23	9765	8484	14014	9422	8918	10122

Table A2 (continued)

Time period	Week	Radon concentration at 100-cm depth (tracks/cm^2/week)					
		site-1	site-3	site-5	site-7	site-9	Average
9/3/97 - 15/3/97	24	6426	5747	5544	13223	9842	8155
16/3/97 - 22/3/97	25	10276	9793	8715	15673	10192	10927
23/3/97 - 29/3/97	26	10773	14819	11389	10143	12614	11949
30/3/97 - 5/4/97	27	12243	11627	14406	15820	16184	14056
6/4/97 - 12/4/97	28	4949	8477	13643	7007	11809	9177
13/4/97 - 19/4/97	29	4508	8281	13041	7392	12131	9072
20/4/97 - 26/4/97	30	7714	6881	9135	6118	7210	7413
27/4/97 - 3/5/97	31	15134	11410	11382	9758	11186	11774
4/5/97 - 10/5/97	32	4592	3402	4690	1974	6377	4207
11/5/97 - 17/5/97	33	6874	6195	9240	6734	7707	7322
18/5/97 - 24/5/97	34	10640	7784	7315	8736	10794	9051
25/5/97 - 31/5/97	35	8316	9541	10598	10339	8841	9527
1/6/97 - 7/6/97	36	12698	10108	10234	7889	8260	9835
8/6/97 - 14/6/97	37	6958	6580	4998	7875	6601	6601
15/6/97 - 21/6/97	38	7875	7630	8309	8610	9919	8470
22/6/97 - 28/6/97	39	7651	7686	5432	11767	11907	8890
29/6/97 - 5/7/97	40	8260	12943	9436	10241	13349	10843

Table A3 Meteorological data.

Date. Number	Date	Rainfall (mm)	Soil-Temperature (°C)		Pa (Avg.) mbar
			50 cm	100 cm	
1	29/9/96	30	27	27	1008.1
2	30	0	29.7	27.3	1007.4
3	1/10/96	0	26.7	25.5	1010.8
4	2	0	27.7	26.6	1013.00
5	3	0	27.7	27.7	1012.05
6	4	0	26.6	25.5	1010.85
7	5	0	27.7	26.6	1009.65
8	6	10	27.7	26.6	1009.75
9	7	110.8	25.5	24.4	1012.35
10	8	0	25.5	24.4	1012.95
11	9	120	26.6	25.5	1012.65
12	10	20	26.6	25.5	1012
13	11	0	25.5	24.4	1012.55
14	12	0	25.5	24.4	1014.1
15	13	0	25.5	24.4	1014.2
16	14	0	25.5	24.4	1012.05
17	15	0	25.5	24.4	1011.1
18	16	0	26.6	25.5	1011.70
19	17	0	26.6	25.5	1012.2
20	18	0	26.6	25.5	1012.05
21	19	0	26.6	25.5	1011.15
22	20	0	28.7	27.7	1011.55
23	21	10	26.6	25.5	1010.65
24	22	0	26.6	25.5	1010.6
25	23	0	27.7	26.6	1012.50
26	24	0	27.7	26.6	1012.75
27	25	0	27.7	26.6	1013.55
28	26	0	28.8	27.7	1013.4

Table A3 (continued)

Date Number	Date	Rainfall (mm)	Soil-Temperature (°C)		Pa (Avg.) mbar
			50 cm	100 cm	
29	27	0	28.6	27.7	1013.3
30	28	0	27.7	26.6	1014.05
31	29	0	28.8	27.7	1011.85
32	30	0	27.8	26.6	1009.80
33	31	0	27.7	26.6	1009.35
34	1/11/96	0	27.7	26.6	1009
35	2	10	27.7	26.6	1008.1
36	3	8.2	26.6	25.5	1008.15
37	4	0	26.6	25.5	1008.25
38	5	110	26.6	25.5	1010
39	6	0	27.7	26.6	1011.20
40	7	0	27.7	26.6	1011.35
41	8	0	27.7	26.6	1011.9
42	9	0	27.7	26.6	1011.05
43	10	0	26.6	25.5	1009.5
44	11	0	26.6	25.5	1010
45	12	0	26.6	25.5	1010.35
46	13	0	27.7	26.6	1010.95
47	14	0	26.6	25.5	1014.9
48	15	0	26.6	25.5	1016.95
49	16	0	26.6	25.5	1015.45
50	17	0	25.5	24.4	1015.25
51	18	0	25.5	24.4	1017.45
52	19	0	25.5	24.4	1017.75
53	20	0	24.4	23.3	1017.95
54	21	0	24.4	23.3	1015.7
55	22	0	26.6	25.5	1014.9
56	23	0	26.6	25.5	1014.1

Table A3 (continued)

Date Number	Date	Rainfall (mm)	Soil-Temperature ('C)		Pa (Avg.) mbar
			50 cm	100 cm	
57	24	0	26.6	25.5	1013.85
58	25	0	25.5	24.4	1012.7
59	26	0	25.5	24.4	1013.1
60	27	0	25.5	24.4	1013.40
61	28	0	25.5	24.4	1012.4
62	29	0	25.5	24.4	1012.45
63	30	0	25.5	24.4	1013.25
64	1/12/96	0	25.5	24.4	1014.25
65	2	0	24.4	23.3	1014.9
66	3	0	26.6	25.5	1014.2
67	4	0	26.6	25.5	1012.80
68	5	0	26.6	25.5	1010.85
69	6	0	24.4	23.3	1013.05
70	7	0	24.4	23.3	1015.9
71	8	0	24.4	23.3	1015.65
72	9	0	25.5	24.4	1015.4
73	10	0	26.6	25.5	1016.1
74	11	0	26.6	25.5	1016.50
75	12	0	26.6	25.5	1016.1
76	13	0	27.7	26.6	1015.95
77	14	0	27.7	26.6	1014.1
78	15	0	27.7	26.6	1012.95
79	16	0	26.6	25.5	1014.55
80	17	0	26.6	25.5	1016.55
81	18	0	26.6	25.5	1016.45
82	19	0	25.5	24.4	1017.7
83	20	0	25.5	24.4	1018.3
84	21	0	25.5	24.4	1018.8

Table A3 (continued)

Date Number	Date	Rainfall (mm)	Soil-Temperature ('C)		Pa (Avg.) mbar
			50 cm	100 cm	
85	22	0	24.4	23.3	1018.3
86	23	0	24.4	23.3	1018.05
87	24	0	24.4	23.3	1016.8
88	25	0	24.4	23.3	1017.25
89	26	0	24.4	23.3	1016.6
90	27	0	23.3	22.2	1016.6
91	28	0	23.3	22.2	1017.45
92	29	0	23.3	22.2	1017.5
93	30	0	24.4	23.3	1017.95
94	31	0	18.8	17.7	1018.45
95	1/1/97	0	18.8	17.7	1018.14
96	2	0	15.5	14.4	1016.84
97	3	0	15.5	14.4	1015.74
98	4	0	13.3	12.2	1016.06
99	5	0	13.3	12.2	1017.24
100	6	0	14.4	13.3	1018.33
101	7	0	14.4	13.3	1019.03
102	8	0	13.3	12.2	1019.56
103	9	0	13.3	12.2	1018.85
104	10	0	22.2	21.1	1018.61
105	11	0	23.3	22.2	1018.69
106	12	0	23.3	22.2	1017.63
107	13	0	23.3	22.2	1015.63
108	14	0	23.3	22.2	1015.26
109	15	0	23.3	22.2	1014.64
110	16	0	22.2	21.1	1014.1
111	17	0	22.2	21.1	1014.05
112	18	0	20	19.4	1014.51

Table A3 (continued)

Date Number	Date	Rainfall (mm)	Soil-Temperature (°C)		Pa (Avg.) mbar
			50 cm	100 cm	
113	19	0	20	19.4	1013.7
114	20	0	19.6	18.7	1012.9
115	21	0	19.6	18.6	1012.88
116	22	0	19.6	18.7	1011.10
117	23	0	19.6	18.7	1009.99
118	24	0	19.6	18.7	1010.26
119	25	0	23.3	22.2	1010.91
120	26	0	25.5	24.4	1013.31
121	27	0	26.6	25.5	1014.31
122	28	0	26.6	25.5	1013.81
123	29	0	26.6	25.5	1012.99
124	30	0	25.5	24.4	1011.55
125	31	0	25.5	24.4	1010.73
126	1/2/97	0	24.4	23.3	1010.8
127	2	0	25.5	25.5	1010
128	3	0	26.6	25.5	1010.85
129	4	0	26.6	25.5	1011
130	5	0	26.4	25.5	1011.35
131	6	0	25.4	24.3	1011.05
132	7	0	25.4	24.3	1011.2
133	8	0	25.4	24.3	1009
134	9	0	25.4	24.3	1009.7
135	10	0	26.6	25.5	1010.85
136	11	0	26.6	25.5	1012.05
137	12	0	26.4	25.4	1011.90
138	13	0	26.4	25.5	1010.4
139	14	0	27.6	26.5	1009.85
140	15	0	27.6	26.5	1010.25

Table A3 (continued)

Date Number	Date	Rainfall (mm)	Soil-Temperature (°C)		Pa (Avg.) mbar
			50 cm	100 cm	
141	16	0	27.6	26.5	1010.85
142	17	0	26.5	25.5	1011.55
143	18	0	25.5	24.4	1012.6
144	19	0	25.5	24.4	1013.75
145	20	0	25.5	24.4	1015.15
146	21	0	25.5	24.4	1015.45
147	22	0	24.3	23.3	1013.85
148	23	0	24.3	23.3	1012.45
149	24	0	24.3	23.3	1013.25
150	25	0	24.3	23.3	1014.4
151	26	0	24.3	23.3	1013.05
152	27	0	25.4	24.4	1013.25
153	28	0	25.4	24.4	1010.1
154	1/3/97	0	25.5	24.4	1011.4
155	2	0	26.5	25.5	1012.6
156	3	0	26.5	25.4	1014.2
157	4	0	26.5	25.4	1014.6
158	5	0	26.5	25.4	1013.90
159	6	0	27.7	25.4	1013.5
160	7	0	27.7	26.6	1013.5
161	8	0	27.7	26.6	1012.8
162	9	0	27.6	26.6	1011.5
163	10	0	28.6	26.6	1012.5
164	11	0	28.6	27.7	1012.5
165	12	0	28.6	27.7	1010.70
166	13	0	28.7	27.7	1009.7
167	14	0	29.7	27.7	1009.2
168	15	0	29.7	28.6	1009.7

Table A3 (continued)

Date Number	Date	Rainfall (mm)	Soil-Temperature ('C)		Pa (Avg.) mbar
			50 cm	100 cm	
169	16	0	28.7	26.5	1010
170	17	0	28.7	26.5	1009.7
171	18	0	29.6	27.5	1010
172	19	0	29.6	27.5	1008.80
173	20	0	29.6	27.5	1008.3
174	21	0	29.6	27.5	1008.8
175	22	0	29.6	27.5	1009.2
176	23	0	29.6	28.6	1009.5
177	24	0	30	28.6	1009.1
178	25	0	30	28.6	1010.5
179	26	0	31.1	28.6	1011.50
180	27	0	27.7	26.6	1011.7
181	28	0	27.7	26.7	1011.9
182	29	0	27.6	26.6	1009.5
183	30	0	26.6	25.5	1010.6
184	31	0	26.6	25.5	1011.5
185	1/4/97	0	27.7	26.6	1009.56
186	2	0	27.7	26.6	1008.80
187	3	0	27.7	25.5	1009.21
188	4	0	26.6	25.5	1008.95
189	5	0	26.6	25.5	1008.76
190	6	0	28.7	26.6	1008.78
191	7	0	26.6	25.5	1009.84
192	8	30	26.6	25.5	1009.61
193	9	0	26.6	25.5	1009.30
194	10	0	25.3	24.4	1010.53
195	11	0	25.3	24.4	1010.3
196	12	0	26.6	25.5	1009.04

Table A3 (continued)

Date Number	Date	Rainfall (mm)	Soil-Temperature ('C)		Pa (Avg.) mbar
			50 cm	100 cm	
197	13	0	26.4	25.5	1008.24
198	14	0	26.4	25.5	1010.09
199	15	0	26.4	25.5	1010.86
200	16	0	27.6	26.6	1009.84
201	17	0	27.6	26.6	1009.58
202	18	0	27.6	26.6	1010.85
203	19	0	27.6	26.6	1011.01
204	20	0	28.6	26.6	1010.14
205	21	0	28.6	27.7	1010.13
206	22	0	28.6	27.7	1009.43
207	23	0	28.6	27.7	1014.03
208	24	0	27.6	26.6	1013.63
209	25	0	27.6	26.6	1013.64
210	26	0	27.6	26.6	1014.35
211	27	8.2	24.3	23.3	1014.24
212	28	0	26.6	25.3	1013.03
213	29	0	26.6	25.3	1011.68
214	30	0	27.4	25.3	1011.88
215	1/5/97	0	25.4	26.5	1011.15
216	2	0	26.5	27.7	1010.15
217	3	0	26.5	27.7	1007.85
218	4	0	27.7	28.7	1007
219	5	0	27.6	28.7	1006.65
220	6	70	27.6	28.7	1006.45
221	7	0	27.6	29.8	1006.60
222	8	12.3	28.7	29.8	1008.65
223	9	0	28.7	29.8	1005.8
224	10	23.2	28.7	29.8	1006.95

Table A3 (continued)

Date Number	Date	Rainfall (mm)	Soil-Temperature (°C)		Pa (Avg.) mbar
			50 cm	100 cm	
225	11	0	27.6	28.7	1006.55
226	12	0	27.6	28.7	1006.3
227	13	0	27.6	28.7	1007.3
228	14	0	28.7	27.7	1007.30
229	15	0	28.7	27.7	1007.15
230	16	0	29.6	27.7	1005
231	17	0	29.6	28.8	1005.15
232	18	6.2	29.6	28.8	1006.65
233	19	0	28.7	27.4	1007
234	20	0	28.7	27.4	1007
235	21	0	28.7	27.4	1005.75
236	22	0	27.6	26.4	1005.35
237	23	0	27.6	26.4	1004.25
238	24	0	28.7	26.4	1005.95
239	25	0	29.6	27.6	1005.7
240	26	10	29.6	28.8	1006.2
241	27	8.2	29.6	28.8	1006
242	28	0	29.6	27.6	1003.75
243	29	6.1	26.5	25.5	1004.3
244	30	0	26.5	25.5	1003.6
245	31	0	27.6	26.6	1005.45
246	1/6/97	115.7	27.6	26.6	1004.96
247	2	0	27.6	26.6	1004.59
248	3	0	28.7	27.7	1005.05
249	4	0	28.7	27.7	1006.31
250	5	0	27.7	26.6	1005.3
251	6	0	27.6	26.6	1004.53
252	7	10	27.6	26.6	1006.55

Table A3 (continued)

Date Number	Date	Rainfall (mm)	Soil-Temperature (°C)		Pa (Avg.) mbar
			50 cm	100 cm	
253	8	0	27.6	26.6	1008.49
254	9	0	27.6	26.5	1008.31
255	10	0	28.7	27.6	1007.83
256	11	0	28.7	27.6	1007.21
257	12	0	28.7	27.6	1008.19
258	13	0	28.7	27.6	1007.94
259	14	0	28.7	27.6	1005.45
260	15	0	28.7	27.6	1005.06
261	16	6.2	26.4	25.5	1005.98
262	17	0	26.4	25.5	1005.88
263	18	0	26.4	25.5	1007.25
264	19	0	28.7	27.6	1006.69
265	20	0	28.7	27.6	1006.73
266	21	0	28.7	27.6	1006.04
267	22	8.3	28.7	27.6	1004.89
268	23	0	25.5	24.5	1003.78
269	24	0	25.5	24.5	1001.79
270	25	0	27.7	26.6	1001.18
271	26	0	27.7	26.6	1001.65
272	27	0	27.7	26.6	1001.95
273	28	0	26.4	25.5	1000.83
274	29	0	26.5	25.5	1000.1
275	30	0	26.5	25.5	1000.68
276	1/1/97	0	26.5	25.5	1002
277	2	0	26.5	25.5	1003.55
278	3	6.2	27.6	26.6	1004.65
279	4	0	27.6	26.6	1004.15
280	5	0	27.6	26.6	1004.8

Table A4 Earthquakes selected from total occurrences using criteria shown in Table 3.1.

Date	Time (Local)	Lat. N	Long E	Region	M (Richter)	X (km)
9/10/96	21:43:21	19.80	99.30	Fang, Chiang Mai	3.1	58.36
14/10/96	19:49:41	18.60	99.00	San Pa Tong, Chiang Mai	2.5	77.94
19/10/96	14:40:31	18.67	98.86	San Pa Tong, Chiang Mai	2.2	76.19
24/10/96	10:29:26	18.72	98.88	Hang Dong, Chiang Mai	2.0	70.33
8/11/96	18:20:20	18.79	100.21	Phayao-Lampang Border	3.0	118.87
9/11/96	03:40:24	21.93	98.98	Myanmar-Chaina Border*	4.8	293.47
11/11/96	16:22:45	18.78	96.45	Myanmar*	6.2	293.44
20/11/96	10:22:32	19.35	99.70	Lampang-Phayao Border	2.2	52.97
27/11/96	15:53:19	19.47	99.05	Phrao, Chiang Mai	2.1	26.21
22/12/96	00:51:06	20.40	100.16	Thailand-Laos Border	5.5	159.41
	01:46:02	20.34	100.27	Thailand-Laos Border	3.1	162.08
	06:08:57	20.58	99.91	Thailand-Myanmar Border*	3.8	161.66
	06:42:11	20.29	100.34	Thailand-Laos Border	3.0	163.42
26/12/96	07:17:42	20.46	100.07	Thailand-Laos Border	3.8	159.01
31/12/96	19:16:03	20.31	100.26	Chiang Khong, Chiang Rai	3.9	158.97
6/1/97	09:47:23	18.71	98.88	Hang Dong, Chiang Mai	2.2	71.31
7/1/97	10:11:34	19.85	98.15	Thailand-Myanmar Border*	3.5	126.76
15/1/97	08:26:26	18.26	96.42	Myanmar*	4.6	312.35
2/2/97	19:52:52	18.57	100.28	Song, Phrae	4.0	137.68
	20:47:18	18.56	100.30	Song, Phrae	3.8	140.03
	21:40:11	18.47	100.28	Song, Phrae	3.3	144.25
	23:45:53	18.61	100.29	Song, Phrae	3.1	136.09

Table A4 (continued)

Date	Time (Local)	Lat. N	Long E	Region	M (Richter)	X (km)
3/2/97	07:52:23	18.71	100.32	Song, Phrae	3.2	133.18
3/3/97	10:29:37	19.36	99.27	Phrao, Chiang Mai	2.5	11.48
	12:04:06	19.38	99.31	Phrao, Chiang Mai	2.6	15.96
13/3/97	01:33:06	19.67	98.45	Pai, Mae Hong Son*	2.2	89.62
	06:03:12	19.69	98.49	Pai, Mae Hong Son*	2.3	87.09
	08:08:07	19.65	98.44	Pai, Mae Hong Son*	2.7	89.51
	13:47:47	19.71	98.54	Pai, Mae Hong Son	2.0	83.89
28/3/97	17:28:29	18.70	98.86	San Pa Tong, Chiang Mai	2.8	73.28
	17:29:29	18.66	98.87	San Pa Tong, Chiang Mai	2.0	76.69
10/4/97	10:03:16	18.70	98.87	Hang Dong, Chiang Mai	2.3	72.77
20/4/97	09:12:39	19.94	99.11	Fang, Chiang Mai	2.0	73.47
	15:46:19	19.91	99.13	Fang, Chiang Mai	3.0	69.94
9/5/97	15:52:34	18.70	98.87	Hang Dong, Chiang Mai	2.2	72.77
18/5/97	11:33:22	18.70	98.87	Hang Dong, Chiang Mai	2.4	72.77
6/6/97	18:06:19	20.49	99.24	Myanmar	4.0	133.65
9/6/97	18:03:42	18.65	98.88	San Pa Tong, Chiang Mai	2.0	77.21
30/6/97	18:01:33	17.99	97.77	Maesariang, Mae Hong Son*	4.0	206.74
2/7/97	18:42:10	18.96	99.03	Mae Tang, Chiang Mai	2.1	39.57

(* not appear in Figure 3.1j)

Table A5 Number of earthquakes selected.

Distance (km)	Magnitude (Richter)						Total
	< 2	2-2.9	3-3.9	4-4.9	5-5.9	> 6	
0-10	-	-	-	-	-	-	0
10-100	-	20	2		-	-	22
100-200	-	-	11	2	1	-	14
200-300	-	-	-	2		1	3
> 300	-	-	-	1			1
Total	0	20	13	5	1	1	40

Table A6 Input data used in M program.

n	50-cm depth		100-cm depth		$X_2(n)$	$X_3(n)$
	Y(n)	$X_1(n)$	Y(n)	$X_1(n)$		
1	5264	27.59	9842	26.60	1010.26	4.29
2	6524	26.13	8288	25.03	1012.34	37.26
3	5299	26.13	11375	25.03	1012.06	0
4	7910	27.69	15638	26.6	1012.14	1.43
5	6748	28	13524	26.91	1010.78	1.43
6	9016	27.23	13930	26.13	1010.27	16.89
7	6986	26.76	13846	25.66	1012.59	0
8	6979	25.5	11585	24.4	1016.16	0
9	7245	25.66	12656	24.56	1013.02	0
10	7854	25.5	15785	24.4	1013.71	0
11	6923	26.44	12978	25.34	1015.69	0
12	6237	26.29	12684	25.19	1016.47	0
13	5621	24.09	12733	22.99	1017.29	0
14	6286	18.51	13573	17.41	1017.24	0
15	3829	16.31	8645	15.21	1018.62	0
16	4655	22.51	8540	21.49	1015.12	0
17	3871	20.19	7966	19.29	1011.68	0
18	4977	25.81	7084	24.71	1012.5	0
19	3542	25.9	7000	24.99	1010.64	0
20	5572	26.66	9149	25.6	1010.71	0
21	6174	25.77	10290	24.7	1013.31	0
22	5194	24.79	5285	23.77	1012.56	0
23	6097	27.01	10122	25.76	1013.59	0

Table A6 (continued)

n	50-cm depth		100-cm depth		$X_2(n)$	$X_3(n)$
	Y(n)	$X_1(n)$	Y(n)	$X_1(n)$		
24	4592	28.79	8155	27.51	1010.83	0
25	5194	29.34	10927	27.21	1009.26	0
26	5943	29.1	11949	27.76	1010.53	0
27	8001	27.07	14056	25.81	1009.63	0
28	4795	26.53	9177	25.34	1009.63	4.29
29	4655	27.09	9072	26.13	1010.07	0
30	4571	28.17	7413	27.07	1012.19	0
31	5481	26.19	11774	25.87	1011.43	1.17
32	2380	28.09	4207	29.33	1006.87	15.07
33	4963	28.49	7322	28.29	1006.39	0
34	4662	28.51	9051	27.17	1005.99	0.89
35	6027	28.43	9527	27.2	1005	3.47
36	6251	27.93	9835	26.91	1005.33	17.96
37	3493	28.93	6601	27.3	1007.63	0
38	5208	27.71	8470	26.7	1006.23	0.89
39	3542	27.03	8890	25.99	1002.3	1.19
40	5110	26.97	10843	25.97	1002.85	0.89

APPENDIX B

PROGRAM 1

```
#include<stdio.h>
#include<conio.h>
main()
{
   FILE *fp;
   int I, j, n, m=3, p, t, N=40, k, a, s, b, h, q;
   float YX, S1, S2, XX, S3, S4, Q;
   int Y[40]={see Table A6};
   float X[40][3]={X1,X2,X3}; (see Table A6)
   char file_name[10];
   clrscr();
   printf("\nFile name:");
   gets(file_name);
   if ((fp=fopen(file_name,"w"))==NULL){
         printf("Error in open file\n");
         exit(1);
         }
    printf("***THIS PROGRAM FOR CALCULATING RXX AND RYX MATRIX***\n");
    printf(">> INSERT PARAMETER (0<p<40)\n");
    printf("p:");
    scanf("%d",&p);
    t=p;
```

```
/*Calculate matrix RXX*/
    for(i=0;i<=p;i++){
            for(j=0;j<=p;j++){
                k=t-i+j;
                printf("\nX%d%d=[\n",i,j);
                fprintf(fp,"\nX%d%d=[\n",i,j);
                for(a=0;a<m;a++){
                     for(b=0;b<m;b++){
                         S3=0;
                         for(n=k;n<N;n++){
                              XX=X[n][a]*X[n-k][b];
                              S3=S3+XX;
                         }/*end n*/
                         if(b==0&&a!=0){
                              printf(";\n");
                              fprintf(fp,";\n");
                         }/*end if j*/
                         S4=S3/(N-k);
                         printf(" %8.2f",S4);
                         fprintf(fp," %8.2f",S4);
                     }/*end b*/
                }/*end a*/
                printf("]\n");
                fprintf(fp,"]\n");
            }/*end j*/
       }/*end i*/
```

```
/*Calculate matrix RYX*/
  for(k=t;k<=(t+p);k++){
            printf("\nY%d=[",k-t);
            fprintf(fp,"\nY%d=[",k-t);
            for(j=0;j<m;j++){
                S1=0;
                for(n=k;n<N;n++){
                    YX=Y[n]*X[n-k][j];
                    S1=S1+YX;
                }/*end n*/
                S2=S1/(N-k);
                printf(" %8.2f",S2);
                fprintf(fp," %8.2f",S2);
            }/*end j*/
          printf("]");
          fprintf(fp,"]");
  }/*end k*/

    /*I matrix*/
    printf("\nI=[");
    fprintf(fp,"\nI=[");
    for(i=0;i<m;i++){
          for(j=0;j<m;j++){
              if(j==0&&i!=0){
                  printf(";\n");
                  fprintf(fp,";\n");
              }/*end if j*/
```

```
            if(i==j){
               printf(" 1");
               fprintf(fp," 1");
            }
            else{
               printf(" 0");
               fprintf(fp," 0");
            }
         }
      }
      printf("]");
      fprintf(fp,"]");

/*Create command for set of Y(n)*/
   for(q=p;q<N;q++){
      for(h=0;h<=p;h++){
         printf("\nQ%d%d=[",q,h);
         fprintf(fp,"\nQ%d%d=[",q,h);
               for(s=0;s<m;s++){
                  Q=X[q-h][s];
                  printf("%4.2f",Q);
                  fprintf(fp,"%4.2f",Q);
                  if(s!=(m-1)){
                        printf(";");
                        fprintf(fp,";");
                  }/*end if s*/
               }/*end s*/
```

```
                printf("]");
                fprintf(fp,"]");
        }/*end h*/
    }/*end q*/

/*Calculate Γ*/
    printf("\nfor e=0:20");
    fprintf(fp,"\nfor e=0:20");
    printf("\n u=e/20;");
    fprintf(fp,"\n u=e/20;");*/
      for(i=0;i<=p;i++){
            printf("\nT%d=[",i);
            fprintf(fp,"\nT%d=[",i);
            for(b=0;b<=p;b++){
                if(b!=0){
                    printf("+");
                    fprintf(fp,"+");
                }/*end b*/
                printf("(Y%d*inv(X%d%d+u*I))",b,b,i);
                fprintf(fp,"(Y%d*inv(X%d%d+u*I))",b,b,i);
            }/*end b*/
            printf("]%d",p+1);
            fprintf(fp,"]/%d",p+1);
        }/*end i*/

/*Calculate Y'(n)*/
  for(q=p;q<N;q++){
```

```
        printf("\nYL%d=",q);
        fprintf(fp,"\nYL%d=",q);
        for(i=0;i<=p;i++){
            if(i!=0){
                printf("+");
                fprintf(fp,"+");
            }/*end i*/
            printf("(T%d*Q%d%d)",i,q,i);
            fprintf(fp,"(T%d*Q%d%d)",i,q,i);
        }/*end i*/
    }/*end q*/
/*Create command for calculating least square*/
    printf("\nL%d(u+1)=y*y';",p);
    fprintf(fp,"\nL%d(u+1)=y*y';",p);
    printf("\nend");
    fprintf(fp,"\nend");
    printf("\nL%d",p);
    fprintf(fp,"\nL%d",p);*/

/*Create command for ploting graph */
    printf("\nM=[");
    fprintf(fp,"\nM=[");
    for(q=p;q<N;q++){
        printf("%d YL%d/%d",Y[q],q,p+1);
        fprintf(fp,"%d YL%d/%d",Y[q],q,p+1);
        if(q!=N-1){
            printf(";");
```

```
            fprintf(fp,";");
        }/*end if p*/
    }/*end p*/
    printf("]");
    fprintf(fp,"]");
    printf("\n g=1:%d",N-p);
    fprintf(fp,"\n g=1:%d",N-p);
    printf("\n plot(g,M)");
    fprintf(fp,"\n plot(g,M)");
    printf("\nxlabel('Time (week)'),ylabel('[Rn]')");
    fprintf(fp,"\nxlabel('Time (week)'),ylabel('[Rn]')");
    printf("\ntitle ('Compare raw data and weather factors (p=%d)')",p);
    fprintf(fp,"\ntitle ('Compare raw data and weather factors (p=%d)')",p);  */
    printf("\ny=M(1:%d)-M(%d:%d)",N-p,N-p+1,2*(n-p));
    fprintf(fp,"\ny=M(1:%d)-M(%d:%d)",N-p,N-p+1,2*(n-p));
    printf("\007");
    fclose(fp);
}/*end main*/
```

CURRICULUM VITAE

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