

Supplementary material for: Data-driven distinction between convective, frontal and mixed extreme rainfall events in radar data

S1. Sampled extreme events

The 39 sampled extreme events for 15-min, 1-hour and 24-hour durations can be seen in Table A, Table B and Table C respectively.

Table A: Sampled 15-min extreme events with respect to the 17 variables selected for analysis

15-min	start	end	duration	max 15min	ratio 15min	max 1hr	max 24hr	mean wet A	min depth	max depth	mean depth	ratio depth	cell num	cell life mean	cell life max	mean vel	sd vel	mean dir	sd dir
			[h]	[mm/hr]	[-]	[mm/hr]	[mm/hr]	[-]	[mm]	[mm]	[mm]	[-]	[-]	[h]	[h]	[m/s]	[-]	[deg.]	[-]
1	14-05-2001 11:12	19-05-2001 01:02	109.83	56.30	35.00	18.20	1.05	0.26	17.91	50.58	29.36	1.72	9.00	0.36	1.08	16.64	5.55	47.98	0.42
2	06-06-2001 00:57	09-06-2001 00:07	71.17	55.93	84.26	14.27	0.66	0.31	4.12	23.90	11.34	2.11	2.00	0.08	0.17	10.27	0.38	80.78	0.16
3	30-06-2001 05:27	30-06-2001 21:27	16.00	87.33	22.92	28.73	1.91	0.41	5.41	45.83	18.11	2.53	7.00	0.43	0.83	12.09	9.77	87.23	0.58
4	17-07-2001 05:32	21-07-2001 16:52	107.33	135.80	92.39	41.88	2.63	0.29	16.53	77.87	34.82	2.24	3.00	0.42	0.50	9.47	1.53	53.72	0.23
5	02-08-2001 15:27	10-08-2001 22:47	199.33	63.30	44.03	18.95	1.24	0.27	27.90	86.38	55.80	1.55	13.00	0.25	1.00	14.29	4.27	85.08	0.61
6	17-03-2002 12:02	22-03-2002 16:07	124.08	44.40	35.88	14.56	1.44	0.46	28.96	83.62	56.44	1.48	6.00	0.36	0.92	13.94	5.66	89.94	0.39
7	19-08-2002 05:32	22-08-2002 04:37	71.08	113.97	43.20	37.53	3.95	0.37	27.28	102.48	53.13	1.93	8.00	0.44	1.00	9.37	3.77	16.81	0.68
8	05-10-2002 06:12	08-10-2002 00:07	65.92	49.43	31.12	25.62	2.77	0.39	10.59	69.32	36.20	1.92	9.00	0.47	1.83	13.83	10.35	143.45	0.76
9	08-06-2003 10:32	08-06-2003 21:02	10.50	119.73	31.86	40.78	2.13	0.49	3.63	51.17	17.48	2.93	8.00	0.19	0.42	12.92	4.55	28.54	0.53
10	17-06-2003 17:17	20-06-2003 00:02	54.75	59.17	37.69	21.68	1.32	0.22	3.08	32.84	12.24	2.68	7.00	0.18	0.33	8.65	3.08	106.13	0.78
11	30-06-2003 07:57	05-07-2003 17:37	129.67	81.73	68.56	21.88	1.52	0.27	15.39	70.14	35.70	1.96	14.00	0.15	0.42	14.21	5.35	53.77	0.27
12	30-07-2003 05:07	31-07-2003 07:07	26.00	80.73	70.45	25.98	1.23	0.36	0.92	29.63	7.03	4.22	5.00	0.37	1.25	7.16	5.33	83.16	0.72
13	10-09-2004 23:47	12-09-2004 04:17	28.50	61.60	16.10	22.43	2.33	0.30	10.83	55.83	26.89	2.08	17.00	0.45	1.08	14.02	4.22	67.10	0.55
14	29-04-2005 01:32	11-05-2005 13:47	300.25	59.27	50.94	18.26	1.37	0.32	47.22	116.53	68.59	1.70	8.00	0.17	0.50	13.06	4.96	63.02	0.33
15	03-06-2005 15:12	06-06-2005 11:42	68.50	45.80	33.98	14.14	1.03	0.29	7.18	40.39	22.10	1.83	10.00	0.25	0.58	13.28	5.21	87.85	0.50
16	29-06-2005 00:27	03-07-2005 00:27	96.00	92.33	33.47	41.19	4.43	0.36	37.68	138.45	78.02	1.77	11.00	0.36	1.17	6.46	4.91	38.70	1.58
17	18-07-2005 22:42	31-07-2005 21:52	311.17	130.77	98.47	36.37	2.50	0.28	44.18	124.88	70.28	1.78	10.00	0.28	0.83	13.39	7.61	62.03	0.52
18	29-05-2006 06:12	01-06-2006 17:02	82.83	41.67	49.19	16.53	0.92	0.28	8.33	30.73	16.57	1.85	5.00	0.35	1.00	14.88	7.95	92.72	0.75
19	24-08-2006 08:17	31-08-2006 22:47	182.50	56.20	35.49	22.01	1.49	0.25	23.08	80.91	51.42	1.57	27.00	0.29	0.92	11.74	5.73	103.27	0.74
20	24-05-2007 22:07	29-05-2007 19:02	116.92	88.50	85.05	25.80	1.58	0.51	26.97	60.99	39.05	1.56	4.00	0.27	0.75	15.22	4.51	32.53	0.58
21	06-08-2007 14:17	10-08-2007 20:02	101.75	182.43	100.01	79.33	4.37	0.59	46.83	184.46	80.74	2.28	1.00	1.50	1.50	7.05	2.34	46.28	0.32
22	14-05-2008 12:02	18-05-2008 01:47	85.75	135.27	127.91	67.80	3.47	0.29	5.93	91.52	19.12	4.79	4.00	0.31	0.58	6.95	5.48	77.29	0.83
23	05-07-2009 12:02	13-07-2009 00:17	180.25	75.40	56.03	21.61	1.70	0.28	32.76	92.73	56.21	1.65	9.00	0.20	0.33	9.91	4.33	74.13	0.32
24	16-07-2009 15:22	25-07-2009 18:12	218.83	94.23	84.16	31.49	1.66	0.26	36.08	73.13	52.89	1.38	7.00	0.29	0.67	14.51	6.71	76.76	0.49
25	10-07-2010 23:02	15-07-2010 08:07	105.08	71.33	36.85	21.58	0.98	0.19	14.41	36.35	22.23	1.64	9.00	0.31	0.75	15.86	4.99	41.19	0.53
26	10-08-2010 15:47	12-08-2010 04:37	36.83	72.57	49.90	43.49	2.46	0.45	10.74	59.63	20.81	2.87	6.00	0.49	1.83	9.15	7.06	44.24	0.75
27	25-08-2010 15:32	01-09-2010 02:27	154.92	60.27	42.10	18.72	2.19	0.44	47.47	120.27	78.13	1.54	16.00	0.31	1.67	12.34	5.72	112.53	0.63
28	04-06-2011 18:42	08-06-2011 11:12	88.50	96.70	44.82	41.74	2.41	0.32	13.66	89.42	41.10	2.18	15.00	0.27	1.08	7.83	4.59	25.72	1.05
29	15-06-2011 05:32	03-07-2011 14:47	441.25	55.73	67.18	19.92	1.47	0.28	40.16	99.09	70.21	1.41	16.00	0.22	0.42	13.54	4.85	65.98	0.53
30	16-07-2011 12:22	22-07-2011 21:37	153.25	86.30	74.44	27.15	1.41	0.32	25.96	69.60	39.76	1.75	6.00	0.18	0.50	9.43	3.95	77.12	1.12
31	11-08-2011 03:02	16-08-2011 13:47	130.75	55.07	36.90	17.47	1.40	0.29	20.90	53.62	38.00	1.41	5.00	0.35	0.67	12.31	4.86	69.10	0.67
32	10-07-2012 10:12	21-07-2012 21:42	275.50	108.87	87.76	31.33	1.75	0.36	53.72	145.63	101.10	1.44	6.00	0.31	1.33	10.24	4.08	71.75	0.53
33	23-08-2012 20:22	26-08-2012 22:12	73.83	53.77	37.89	19.19	1.75	0.40	14.79	56.55	29.16	1.94	11.00	0.20	0.58	13.91	6.79	99.17	0.67
34	06-04-2013 05:02	14-04-2013 04:12	191.17	34.40	73.51	9.13	0.66	0.38	14.08	33.75	23.64	1.43	1.00	1.08	1.08	12.61	1.88	81.87	0.34
35	07-05-2013 09:12	09-05-2013 12:52	51.67	67.93	62.69	32.58	1.50	0.29	0.88	39.08	9.22	4.24	4.00	0.60	1.00	7.75	4.38	295.46	0.85
36	19-06-2013 18:02	25-06-2013 15:12	141.17	364.70	202.71	110.81	5.40	0.29	16.73	155.09	58.70	2.64	3.00	0.53	0.67	11.25	4.04	357.37	0.41
37	22-07-2013 11:42	31-07-2013 07:02	211.33	121.23	95.53	59.63	3.16	0.22	13.41	125.56	39.62	3.17	14.00	0.36	0.92	7.30	6.85	119.31	1.61
38	24-08-2013 13:32	26-08-2013 15:27	49.92	56.53	56.00	19.95	0.93	0.26	2.33	24.46	9.75	2.51	3.00	0.36	0.92	9.32	3.38	245.25	0.61
39	06-09-2013 13:57	14-09-2013 18:57	197.00	93.87	55.13	34.85	2.18	0.37	61.10	110.71	86.76	1.28	11.00	0.24	0.58	12.96	6.09	340.25	1.80

Table B: Sampled 1-hour extreme events

1-hour	start	end	duration	max	ratio	max	max	mean	min	max	mean	ratio	cell	cell	cell	mean	sd	mean	sd
				15min	15min	1hr	24hr	wet A	depth	depth	depth	depth	num	life	life	life	vel	vel	dir
			[h]	[mm/hr]	[-]	[mm/hr]	[mm/hr]	[-]	[mm]	[mm]	[mm]	[-]	[-]	[h]	[h]	[m/s]	[-]	[deg.]	[-]
1	06-06-2001 00:57	09-06-2001 00:07	71.17	55.93	84.26	14.27	0.66	0.31	4.12	23.90	11.34	2.11	2.00	0.08	0.17	10.27	0.38	80.78	0.16
2	27-06-2001 08:07	29-06-2001 00:17	40.17	78.43	30.13	31.43	1.49	0.25	2.30	35.73	9.57	3.73	5.00	0.33	0.50	9.98	8.47	19.95	0.66
3	17-07-2001 05:32	21-07-2001 16:52	107.33	135.80	92.39	41.88	2.63	0.29	16.53	77.87	34.82	2.24	3.00	0.42	0.50	9.47	1.53	53.72	0.23
4	02-08-2001 15:27	10-08-2001 22:47	199.33	63.30	44.03	18.95	1.24	0.27	27.90	86.38	55.80	1.55	13.00	0.25	1.00	14.29	4.27	85.08	0.61
5	09-06-2002 13:52	16-06-2002 11:52	166.00	61.27	54.84	27.10	1.43	0.37	35.73	75.58	55.63	1.36	13.00	0.22	1.08	23.67	18.73	79.84	0.75
6	19-08-2002 05:32	22-08-2002 04:37	71.08	113.97	43.20	37.53	3.95	0.37	27.28	102.48	53.13	1.93	8.00	0.44	1.00	9.37	3.77	16.81	0.68
7	05-10-2002 06:12	08-10-2002 00:07	65.92	49.43	31.12	25.62	2.77	0.39	10.59	69.32	36.20	1.92	9.00	0.47	1.83	13.83	10.35	143.45	0.76
8	02-06-2003 11:22	05-06-2003 17:37	78.25	67.23	28.91	24.53	1.39	0.19	1.83	36.31	14.44	2.52	12.00	0.37	1.33	9.77	4.92	30.33	0.76
9	17-06-2003 17:17	20-06-2003 00:02	54.75	59.17	37.69	21.68	1.32	0.22	3.08	32.84	12.24	2.68	7.00	0.18	0.33	8.65	3.08	106.13	0.78
10	30-06-2003 07:57	05-07-2003 17:37	129.67	81.73	68.56	21.88	1.52	0.27	15.39	70.14	35.70	1.96	14.00	0.15	0.42	14.21	5.35	53.77	0.27
11	20-07-2004 04:12	23-07-2004 08:07	75.92	52.97	39.52	21.68	1.17	0.34	11.06	42.03	21.81	1.93	15.00	0.29	0.83	11.87	4.52	9.25	0.86
12	10-09-2004 23:47	12-09-2004 04:17	28.50	61.60	16.10	22.43	2.33	0.30	10.83	55.83	26.89	2.08	17.00	0.45	1.08	14.02	4.22	67.10	0.55
13	29-04-2005 01:32	11-05-2005 13:47	300.25	59.27	50.94	18.26	1.37	0.32	47.22	116.53	68.59	1.70	8.00	0.17	0.50	13.06	4.96	63.02	0.33
14	29-05-2005 21:22	31-05-2005 23:02	49.67	34.13	20.89	17.18	1.33	0.48	13.30	33.85	20.82	1.63	12.00	0.26	0.83	15.23	5.02	52.76	0.84
15	03-06-2005 15:12	06-06-2005 11:42	68.50	45.80	33.98	14.14	1.03	0.29	7.18	40.39	22.10	1.83	10.00	0.25	0.58	13.28	5.21	87.85	0.50
16	29-06-2005 00:27	03-07-2005 00:27	96.00	92.33	33.47	41.19	4.43	0.36	37.68	138.45	78.02	1.77	11.00	0.36	1.17	6.46	4.91	38.70	1.58
17	18-07-2005 22:42	31-07-2005 21:52	311.17	130.77	98.47	36.37	2.50	0.28	44.18	124.88	70.28	1.78	10.00	0.28	0.83	13.39	7.61	62.03	0.52
18	24-08-2006 08:17	31-08-2006 22:47	182.50	56.20	35.49	22.01	1.49	0.25	23.08	80.91	51.42	1.57	27.00	0.29	0.92	11.74	5.73	103.27	0.74
19	29-09-2006 16:02	07-10-2006 21:17	197.25	39.40	33.19	13.34	1.54	0.32	29.23	70.16	45.43	1.54	6.00	0.50	1.25	13.59	4.53	82.81	0.59
20	08-11-2006 17:02	15-11-2006 10:52	161.83	19.77	18.51	10.63	1.12	0.42	24.52	88.23	55.54	1.59	15.00	0.24	0.67	19.00	12.34	124.63	0.78
21	24-05-2007 22:07	29-05-2007 19:02	116.92	88.50	85.05	25.80	1.58	0.51	26.97	60.99	39.05	1.56	4.00	0.27	0.75	15.22	4.51	32.53	0.58
22	06-08-2007 14:17	10-08-2007 20:02	101.75	182.43	100.01	79.33	4.37	0.59	46.83	184.46	80.74	2.28	1.00	1.50	1.50	7.05	2.34	46.28	0.32
23	18-08-2007 16:22	23-08-2007 22:02	125.67	94.57	47.69	26.57	3.32	0.39	43.68	112.10	74.62	1.50	6.00	0.15	0.25	9.67	5.91	330.95	1.49
24	14-05-2008 12:02	18-05-2008 01:47	85.75	135.27	127.91	67.80	3.47	0.29	5.93	91.52	19.12	4.79	4.00	0.31	0.58	6.95	5.48	77.29	0.83
25	22-01-2009 12:47	24-01-2009 14:42	49.92	27.47	19.47	14.29	1.80	0.58	17.71	46.73	31.76	1.47	11.00	0.42	1.08	17.32	9.36	56.01	0.82
26	16-07-2009 15:22	25-07-2009 18:12	218.83	94.23	84.16	31.49	1.66	0.26	36.08	73.13	52.89	1.38	7.00	0.29	0.67	14.51	6.71	76.76	0.49
27	06-08-2009 20:47	13-08-2009 16:12	163.42	27.63	29.76	14.50	1.38	0.26	17.81	46.39	29.35	1.58	22.00	0.24	1.08	19.89	13.09	104.99	0.86
28	25-07-2010 06:07	30-07-2010 02:37	116.50	75.47	45.94	20.70	1.74	0.34	31.39	75.31	49.40	1.52	4.00	0.42	0.92	8.82	2.64	83.60	0.42
29	10-08-2010 15:47	12-08-2010 04:37	36.83	72.57	49.90	43.49	2.46	0.45	10.74	59.63	20.81	2.87	6.00	0.49	1.83	9.15	7.06	44.24	0.75
30	25-08-2010 15:32	01-09-2010 02:27	154.92	60.27	42.10	18.72	2.19	0.44	47.47	120.27	78.13	1.54	16.00	0.31	1.67	12.34	5.72	112.53	0.63
31	17-01-2011 14:57	20-01-2011 10:42	67.75	29.43	29.69	16.28	0.84	0.31	6.23	28.79	16.91	1.70	7.00	0.42	1.50	10.00	3.92	88.99	0.66
32	04-06-2011 18:42	08-06-2011 11:12	88.50	96.70	44.82	41.74	2.41	0.32	13.66	89.42	41.10	2.18	15.00	0.27	1.08	7.83	4.59	25.72	1.05
33	11-08-2011 03:02	16-08-2011 13:47	130.75	55.07	36.90	17.47	1.40	0.29	20.90	53.62	38.00	1.41	5.00	0.35	0.67	12.31	4.86	69.10	0.67
34	23-08-2012 20:22	26-08-2012 22:12	73.83	53.77	37.89	19.19	1.75	0.40	14.79	56.55	29.16	1.94	11.00	0.20	0.58	13.91	6.79	99.17	0.67
35	07-05-2013 09:12	09-05-2013 12:52	51.67	67.93	62.69	32.58	1.50	0.29	0.88	39.08	9.22	4.24	4.00	0.60	1.00	7.75	4.38	295.46	0.85
36	19-06-2013 18:02	25-06-2013 15:12	141.17	364.70	202.71	110.81	5.40	0.29	16.73	155.09	58.70	2.64	3.00	0.53	0.67	11.25	4.04	357.37	0.41
37	22-07-2013 11:42	31-07-2013 07:02	211.33	121.23	95.53	59.63	3.16	0.22	13.41	125.56	39.62	3.17	14.00	0.36	0.92	7.30	6.85	119.31	1.61
38	24-08-2013 13:32	26-08-2013 15:27	49.92	56.53	56.00	19.95	0.93	0.26	2.33	24.46	9.75	2.51	3.00	0.36	0.92	9.32	3.38	245.25	0.61
39	06-09-2013 13:57	14-09-2013 18:57	197.00	93.87	55.13	34.85	2.18	0.37	61.10	110.71	86.76	1.28	11.00	0.24	0.58	12.96	6.09	340.25	1.80

Table C: Sampled 24-hour extreme events

24-hour	start	end	duration	max 15min	ratio 15min	max 1hr	max 24hr	mean wet A	min depth	max depth	mean depth	ratio depth	cell num	cell life mean	cell life max	mean vel	sd vel	mean dir	sd dir
			[h]	[mm/hr]	[-]	[mm/hr]	[mm/hr]	[-]	[mm]	[mm]	[mm]	[-]	[-]	[h]	[h]	[m/s]	[-]	[deg.]	[-]
1	01-01-2001 03:27	11-01-2001 09:02	245.58	27.70	29.11	10.89	2.48	0.47	50.17	101.68	71.75	1.42	3.00	0.33	0.58	17.65	4.46	77.43	0.24
2	17-07-2001 05:32	21-07-2001 16:52	107.33	135.80	92.39	41.88	2.63	0.29	16.53	77.87	34.82	2.24	3.00	0.42	0.50	9.47	1.53	53.72	0.23
3	30-08-2001 09:02	17-09-2001 21:12	444.17	58.70	49.62	20.81	2.33	0.34	89.37	204.38	153.62	1.33	10.00	0.28	0.92	9.71	5.27	75.33	0.61
4	19-09-2001 08:02	23-09-2001 14:37	102.58	68.97	39.02	22.49	3.12	0.34	24.19	101.56	51.77	1.96	5.00	0.18	0.33	11.28	3.51	119.75	0.43
5	06-11-2001 02:17	09-11-2001 03:17	73.00	29.57	20.83	9.30	2.19	0.43	24.78	66.21	44.35	1.49	7.00	0.23	0.42	14.52	5.52	96.13	0.47
6	19-08-2002 05:32	22-08-2002 04:37	71.08	113.97	43.20	37.53	3.95	0.37	27.28	102.48	53.13	1.93	8.00	0.44	1.00	9.37	3.77	16.81	0.68
7	05-10-2002 06:12	08-10-2002 00:07	65.92	49.43	31.12	25.62	2.77	0.39	10.59	69.32	36.20	1.92	9.00	0.47	1.83	13.83	10.35	143.45	0.76
8	07-11-2002 00:27	11-11-2002 16:12	111.75	46.10	26.29	15.78	2.28	0.54	39.27	100.08	69.23	1.45	3.00	0.08	0.17	7.13	5.42	135.00	0.66
9	23-12-2002 22:47	31-12-2002 08:57	178.17	16.40	13.38	8.75	2.31	0.52	55.65	127.49	90.00	1.42	37.00	0.32	1.17	15.85	6.69	89.80	0.67
10	03-10-2003 04:07	12-10-2003 03:17	215.17	28.10	18.14	14.36	2.64	0.44	62.73	150.40	99.83	1.51	25.00	0.33	1.08	14.25	7.52	97.94	0.59
11	11-12-2003 10:57	16-12-2003 20:47	129.83	34.00	20.16	16.13	3.79	0.50	31.30	131.59	80.16	1.64	14.00	0.22	0.75	17.67	6.54	106.59	0.71
12	19-01-2004 04:02	20-01-2004 06:22	26.33	10.77	6.63	6.32	2.26	0.89	21.70	54.18	34.50	1.57	41.00	0.36	3.08	15.37	11.90	157.76	1.27
13	06-05-2004 09:52	08-05-2004 06:02	44.17	10.33	7.83	7.78	2.44	0.83	32.20	63.58	46.57	1.37	51.00	0.48	5.25	9.18	8.83	228.73	1.13
14	10-09-2004 23:47	12-09-2004 04:17	28.50	61.60	16.10	22.43	2.33	0.30	10.83	55.83	26.89	2.08	17.00	0.45	1.08	14.02	4.22	67.10	0.55
15	20-09-2004 07:32	30-09-2004 20:07	252.58	27.97	24.79	12.08	2.50	0.35	51.86	96.32	79.12	1.22	20.00	0.21	0.58	14.72	6.18	121.42	0.54
16	15-11-2004 17:02	24-11-2004 04:47	203.75	17.00	14.06	11.93	3.69	0.51	59.93	154.06	104.03	1.48	38.00	0.21	0.67	14.77	6.56	130.15	0.75
17	17-01-2005 19:07	26-01-2005 02:57	199.83	32.30	24.95	15.35	2.56	0.46	53.55	127.98	95.98	1.33	18.00	0.35	2.08	12.48	7.84	127.90	1.06
18	09-02-2005 18:02	16-02-2005 18:27	168.42	30.90	26.15	10.62	2.86	0.56	48.87	153.18	103.46	1.48	4.00	0.15	0.17	23.58	5.40	103.37	0.15
19	29-06-2005 00:27	03-07-2005 00:27	96.00	92.33	33.47	41.19	4.43	0.36	37.68	138.45	78.02	1.77	11.00	0.36	1.17	6.46	4.91	38.70	1.58
20	24-03-2006 10:32	05-04-2006 19:27	296.92	32.73	31.51	11.73	1.72	0.43	48.83	132.16	89.28	1.48	6.00	0.29	0.50	17.67	7.41	97.58	0.55
21	15-05-2006 18:37	28-05-2006 05:12	298.58	43.23	30.09	15.04	2.00	0.47	78.55	186.32	143.86	1.30	10.00	0.19	0.42	16.83	7.51	74.33	0.38
22	29-09-2006 16:02	07-10-2006 21:17	197.25	39.40	33.19	13.34	1.54	0.32	29.23	70.16	45.43	1.54	6.00	0.50	1.25	13.59	4.53	82.81	0.59
23	10-12-2006 23:07	13-12-2006 15:37	64.50	9.43	6.84	7.80	1.75	0.64	14.94	48.64	35.61	1.37	52.00	0.43	4.33	13.27	9.51	106.52	1.14
24	06-05-2007 17:42	17-05-2007 15:57	262.25	79.07	69.61	20.81	2.45	0.53	60.10	184.69	120.20	1.54	9.00	0.39	0.92	16.49	4.34	103.48	0.41
25	06-08-2007 14:17	10-08-2007 20:02	101.75	182.43	100.01	79.33	4.37	0.59	46.83	184.46	80.74	2.28	1.00	1.50	1.50	7.05	2.34	46.28	0.32
26	18-08-2007 16:22	23-08-2007 22:02	125.67	94.57	47.69	26.57	3.32	0.39	43.68	112.10	74.62	1.50	6.00	0.15	0.25	9.67	5.91	330.95	1.49
27	02-11-2007 01:37	15-11-2007 04:07	314.50	22.77	21.20	10.50	1.93	0.40	54.03	132.81	101.55	1.31	19.00	0.30	0.83	17.27	7.40	146.91	0.85
28	29-11-2007 05:52	11-12-2007 17:32	299.67	20.27	17.81	10.63	2.48	0.50	66.04	175.95	136.15	1.29	20.00	0.23	0.58	17.94	6.06	102.20	0.56
29	29-09-2008 12:32	09-10-2008 23:42	251.17	30.60	26.39	11.46	2.30	0.47	53.53	143.60	100.53	1.43	14.00	0.34	1.33	18.32	8.85	92.24	0.67
30	10-08-2010 15:47	12-08-2010 04:37	36.83	72.57	49.90	43.49	2.46	0.45	10.74	59.63	20.81	2.87	6.00	0.49	1.83	9.15	7.06	44.24	0.75
31	02-11-2010 12:32	15-11-2010 19:42	319.17	24.07	23.05	11.98	2.78	0.55	91.21	188.89	142.05	1.33	34.00	0.35	1.75	16.31	9.14	96.32	0.84
32	11-01-2011 09:12	15-01-2011 19:22	106.17	21.47	18.06	9.53	2.74	0.67	33.32	109.95	73.09	1.50	5.00	0.45	0.92	16.04	6.42	96.76	0.71
33	11-12-2011 17:52	18-12-2011 20:22	170.50	19.37	18.12	11.38	1.90	0.54	41.98	94.40	73.31	1.29	36.00	0.31	2.50	17.67	16.23	99.21	1.12
34	18-01-2012 15:22	24-01-2012 12:02	140.67	19.00	15.92	7.03	2.03	0.51	47.59	99.88	73.09	1.37	24.00	0.24	1.17	20.18	9.10	123.92	0.80
35	02-10-2012 06:47	07-10-2012 02:17	115.50	27.47	16.86	15.17	2.52	0.47	36.25	90.95	64.61	1.41	31.00	0.30	0.83	18.31	9.72	81.79	0.59
36	20-12-2012 12:57	04-01-2013 09:37	356.67	26.13	25.63	12.73	2.97	0.51	75.56	178.28	133.77	1.33	27.00	0.34	1.50	15.25	6.70	93.74	0.72
37	19-06-2013 18:02	25-06-2013 15:12	141.17	364.70	202.71	110.81	5.40	0.29	16.73	155.09	58.70	2.64	3.00	0.53	0.67	11.25	4.04	357.37	0.41
38	22-07-2013 11:42	31-07-2013 07:02	211.33	121.23	95.53	59.63	3.16	0.22	13.41	125.56	39.62	3.17	14.00	0.36	0.92	7.30	6.85	119.31	1.61
39	06-09-2013 13:57	14-09-2013 18:57	197.00	93.87	55.13	34.85	2.18	0.37	61.10	110.71	86.76	1.28	11.00	0.24	0.58	12.96	6.09	340.25	1.80

S2. Hierarchical Clustering method

The hierarchical clustering methods selected are the Ward method and the Average Linkage Method (Murtagh, 1983). The methods are agglomerative clustering methods where all events start in separate clusters, the two less dissimilar events are joined until all events are in one cluster (Cormack, 1971). The dissimilarities between events are calculated based on the Lance-Williams cluster update method (Lance and Williams, 1966). The results are illustrated using dendrograms. Dendrograms for Ward and Average linkage methods can be seen in Figure A, top and bottom respectively.

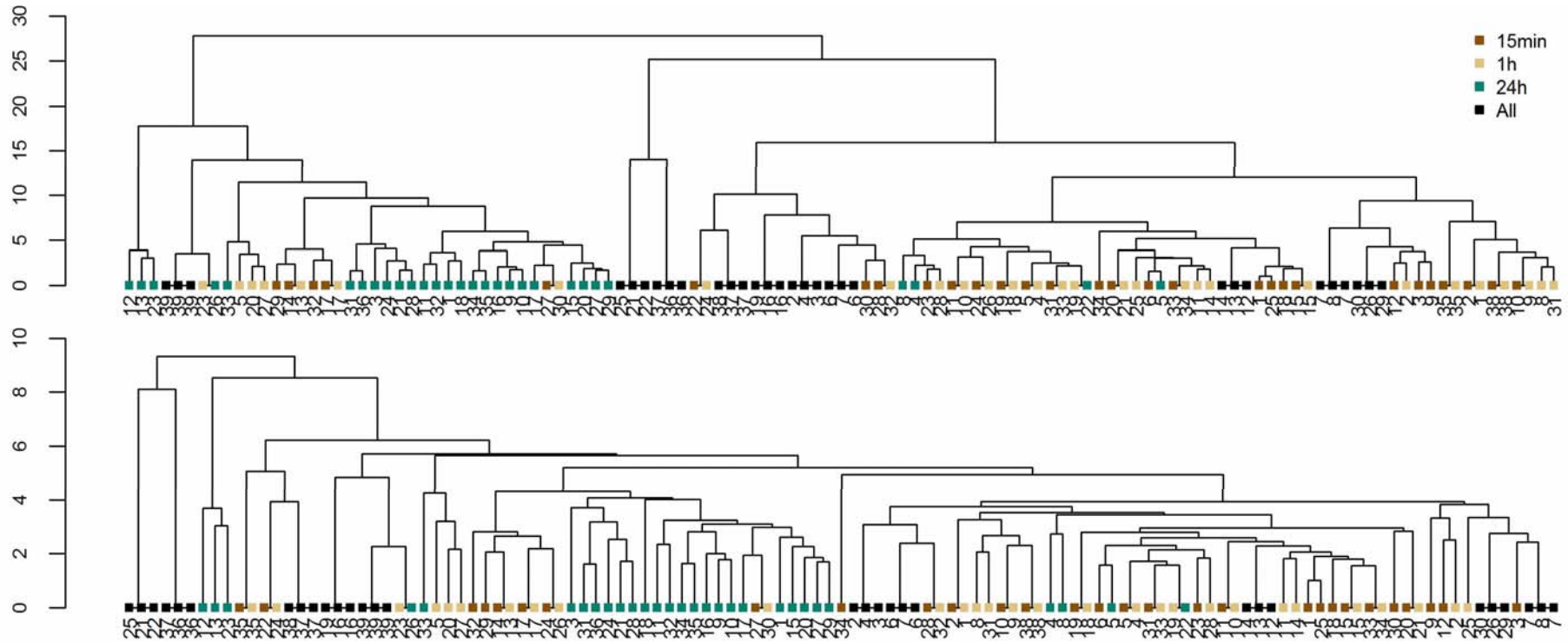


Figure A: Dendrogram performed on the combined dataset of 15-min, 1-hour and 24-hour extreme events with Ward (top) and Average linkage (bottom) method.

S3. References

Cormack, R. M.: A Review of Classification, *J. R. Stat. Soc. Ser. A*, 134(3), 321–367, 1971.

Lance, G. N. and Williams, W. T.: A generalized sorting strategy for computer classifications, *Nature*, 212, 218, doi:10.1038/212218a0, 1966.

Murtagh, F.: A Survey of Recent Advances in Hierarchical Clustering Algorithms, *Comput. J.*, 26(4), 354–359, doi:10.1093/comjnl/26.4.354, 1983.