RADAR PROTOCOLS
7.2 Weather Events for Exclusion from Analysis
Updated: January 30, 2014   Written: January 24, 2012

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7.2 Weather Events for Exclusion from Analysis –view and record for Sampling Period

- Using radR[1] view raw data with display options[2] of: compass and 500 meter range rings. Place code below into the console window and hit enter (if data from 2011 in our study, base sampling rate of 54MHz was used instead of 100MHz).
    - rss.add.hook("GET_SCAN_INFO", "user", function(x) {x$sample.dist <- x$sample.dist * 54 / 100; return(x)})
- For vertical files record antenna bearing offset in degrees clockwise from N.[3]
    - (eg, used 79° for 2011 spring vertical data)
- Scan through the file with player scroll bar for precipitation and major events. In our project we defined events as follows:
    - Rain - precipitation event that takes up more than 1/3 of the compass range
    - Shower - precipitation event that is described within 1/3 or less of the compass range, and within 1000m of distance spread
    - Clear - no precipitation visible in 0 to 360 degrees and 0 to 3km distance from radar.
    - Heavy target traffic - many targets visible at one time.
- Record the compass degree range, and distance from radar range of the event, along with the Rec. file number and description of event in an Excel worksheet[4].
- Precipitation interference can be significant during heavy rains, but may also be filtered out using blip processing parameters for target intensity; area; and samples. With established parameters for the projects' target tracking, examine radR's ability to distinguish precipitation from bird targets. The text file associated with the sample periods R-script, will need to be edited to include the separation of raw data for analysis using the start.rec and stop.rec.

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[1] radR was run with the xir3000arch patch that displays the current record number in the plot window text box. Written Oct7, 2011 by John Brzustowski from the radR project.
[2] Right click in plot window to select /view/display options select preferences for compass and 500m range rings.
[3] Right click in plot window to select /plugins/antenna/controls
[4] The time of the event can be determined by looking at the Rec file details and noting the time of the file creation.

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Example of record keeping for multiple sampling periods and their specific interference events.

	A	B	C	D	E	F	G	H	I	J	K
1	Season and Location	Date and Time	rec number	time	precip	comments	degree1	degree2	km_dist1	km_dist2	overall comment
266	2011_fall_JC15_horiz	2011-08-29 20-13-14	13761	06:02	clear	Sunrise	0	360	0	1.5	
267	2011_fall_JC15_horiz	2011-08-29 20-13-14	14330	06:26	clear		0	360	0	1.5	very few targets
268	2011_fall_JC15_horiz	2011-08-29 20-13-14	19227	09:54	clear	end	0	360	0	1.5	
269	2011_fall_JC15_horiz	2011-08-30 20-05-39	1	20:05	rain		0	360	0	1.5	targets, few seen throu
270	2011_fall_JC15_horiz	2011-08-30 20-05-39	550	20:29	clear		0	360	0	1.5	
271	2011_fall_JC15_horiz	2011-08-30 20-05-39	612	20:32	shower		330	5	1.5	1.5	shower coming in and c
272	2011_fall_JC15_horiz	2011-08-30 20-05-39	1000	20:49	shower		0	360	0	1	targets seen in clear mi
273	2011_fall_JC15_horiz	2011-08-30 20-05-39	1500	21:10	clear		0	360	0	1.5	targets, full on
274	2011_fall_JC15_horiz	2011-08-30 20-05-39	13408	05:43	clear		0	360	0	1.5	fewer targets, still good
275	2011_fall_JC15_horiz	2011-08-30 20-05-39	13980	06:04	clear	Sunrise	0	360	0	1.5	
276	2011_fall_JC15_horiz	2011-08-30 20-05-39	18993	09:42	clear	end	0	360	0	1.5	more bugs? In first .5km
277	2011_fall_JC15_vert	2011-08-27 20-19-40	1	20:19	clear		270	90	0.25	1.5	consistent linear flares
278	2011_fall_JC15_vert	2011-08-27 20-19-40	198	20:28	clear		60 T		0.5 T		first clear target
279	2011_fall_JC15_vert	2011-08-27 20-19-40	1200	21:12	clear		270	90	0.25	1.5	steady targets
280	2011_fall_JC15_vert	2011-08-27 20-19-40	3400	22:49	clear		270	90	0.25	1.5	higher targets, steady
281	2011_fall_JC15_vert	2011-08-27 20-19-40	13131	05:58	clear	Sunrise	270	90	0.25	1.5	very few targets
282	2011_fall_JC15_vert	2011-08-27 20-19-40	16383	08:21	clear	end	270	90	0.2	1.5	
283	2011_fall_JC15_vert	2011-08-28 20-14-41	1	20:14	clear		270	90	0.2	1.5	empty sky

Raw Data Folders   **radR precip & obs**   Sheet3