Cell Algorithm Output

NSSL Cell Algorithm Output for Volume 203

CELLID	AZ	RAN	CIRC	BURST	SVRH	SIZE	HAIL	VIL	MAXZ	HT MXZ	BASE	TOP	DIR/SP	SREH	LTG	% +LTG	COUNTY
70	334	52	TVSMES	SEVCNV	50%	<1.00	100%	43	56	5	5	36	240/41				VOLUSI
15	22	98	MESO		90%	1.75	100%	32	60	22	22	41	239/37				
17	285	47	CIRC	SEVCNV	70%	1.25	100%	55	60	14	4	37	247/43				OSCEOL
4	13	84	CIRC		50%	1.00	100%	47	56	10	10	34	242/47				
74	284	43			20%	<1.00	90%	16	52	16	16	37					OSCEOL

Figure 4.1: Cell Algorithm Output Table showing five detected cells, with the most severe listed at the top.

Abbreviation	Element	Color Coding
CELLID	Cell ID Number	No color coding
AZ	Cell Azimuth from radar, in ° from North	No color coding
RAN	Cell Range from radar, in km	No color coding
CIRC	Type of circulation within cell (See table, p. 4-8)	Magenta ..... Tornado Red ..... Mesocyclone Orange ..... 3-D Feature Yellow ..... 2-D Feature
BURST	DET-detection PRD-prediction WEK-weak, MOD-moderate SEV-severe	Green -WEKDET/WEKPRD Yellow-MODDET/MODPRD Red-SEVDET/SEVPRD
SVRH	Probability of **severe hail** with the storm cell (>3/4 inches in diameter)	Red ..... 50 - 100% Yellow ..... 10 - 40% Green 0%
SIZE	Maximum expected hail size with storm (diameter)	Red ≥ 2.0 inches Yellow .....1.0 - 1.75 inches Green .....< 1.0 inch
HAIL	Probability of hail with storm cell	Red .....50 - 100% Yellow ..... 10 - 49% Green ..... < 10%
VIL	Vertically Integrated Liquid	Red ..... >49% Yellow ..... 10-49% Green <10%

Abbreviation	Element	Color Coding
MAXZ	Maximum reflectivity. Color corresponds to that of the color range on the reflectivity images	
HT MXZ	Height of Maximum Reflectivity in the storm cell	Red.....> 20 kf (metric) Yellow ..... 10-20 kf (metric) Green ..... < 10 kf (metric)
BASE	Height of base of the storm cell in kf	No color coding
TOP	Height of the top of the storm cell in kf	No color coding
DIR/SP	Direction of movement (in ° from North, clockwise) Speed of movement (in mi/hr)	No color coding No color coding
SREH	Storm relative helicity	No color..... <100 Green .....<200 Yellow .....<300 Red .....>300
LTG	Lightning	No color..... <3 Green.....<6 Yellow.....<11 Red.....>1
% + LTG	Percent + strokes	Green..... <30 Yellow.....<50 Red.....>50
COUNTY	County storm is in	

Mesocyclone Algorithm Output

NSSL Mesocyclone Algorithm Output for Volume 203

MESOID	AZ	RAN	CELLID	CIRC	RANK	MSI	BASE	DEPTH	LA DIA	LAROTV	MXROTV	MX SHR	MX GTG	DIR	SPEED	POT	POSW
199	331	50	70	TVSMES	9	4924	4	15	1	49	52	32	101	237	37	98%	98%
248	20	105	15	MESO	8	4044	13	18	4	37	45	13	85	217	52	18%	18%
144	22	98	15	MESO	8	3666	12	10	4	37	37	9	68	245	35	96%	96%
180	19	108	0	MESO	6	3219	14	22	6	31	31	3	62	228	45	19%	37%
234	279	49	17	CIRC	3	3001	4	25	2	33	39	7	49	240	39	15%	15%

Figure 4.2: Mesocyclone Algorithm Output Table showing five detected mesocyclones, with the most severe listed at the top.

Abbreviation	Element	Color Coding
MESOID	Mesocyclone ID Number	No color coding
AZ	Mesocyclone Azimuth (in ° from North, clockwise)	No color coding
RAIN	Mesocyclone Range (km)	No color coding
CELLID	Associated Storm ID Number	No color coding
CIRC	Circulation Type See table, p. 6-6)	Magenta ..... Tornadic Red... ..... Mesocyclone Orange ..... 3-D Couplet
RANK	Strength Rank	Red... ..... ≥ 5 Yellow ..... 3-4 Green 1-2
MSI	Mesocyclone Strength Index	Red.....≥ 3,400 Yellow..... ≥ 2,300 - 3,399 Green ..... < 2,300
BASE	Mesocyclone Base height (km or kft)	Red... ..... At 0.5 ° sweep White ..... Above 0.50 swp
DEPTH	Mesocyclone Depth (km or kft)	No color coding
LA DIA	Low-altitude diameter of circulation (km or nm)	Red< 4 km (<2nm) Yellow .....4 - 7 km (2-4 nm) Green .....7 - 10 km (4-5 nm) White .....≥ 10 km(>15 nm)

Abbreviation	Element	Color Coding
LAROTV	Low-altitude rotational velocity	Red.....> 30 m/s (758 knots) Yellow... 20 - 30m/s(39-58 knots) Green.....< 20 m/s (<39 knots)
MXROTV	Maximum rotational velocity	Red> 30 m/s (758 knots) Yellow ..20 - 30 m/s(39-58 knots) Green< 20 m/s
MA X SHR	Maximum shear (10^{-3} s^{-1})	Red..... ..... > 30 Yellow.....20 - 30 Green..... ..... < 20
MX GTG	Maximum gate-to-gate velocity difference	Red.....> 40 m/s (>78 knots) Yellow..20 - 40 m/s (39-78 knots) Green..... .....< 20 m/s
DIR	Mesocyclone direction	No color coding
SPEED	Mesocyclone speed (m/s or knots)	No color coding
POT	Probability of Tornado	Red..... .... > 50% Yellow..... ..... 11 - 50% Green..... .....≤ 10%
POSW	Probability of Severe Weather	Red..... ..... > 50% Yellow..... ..... 11 - 50% Green..... ..... ≤ 10

CIRC Color Key for Cell and Mesocyclone Algorithm Tables

For the circulation column (CIRC) in the Cell and Mesocyclone Algorithm tables, use the following color key:

Color	Abbreviation	Meaning
Magenta	TVMES	Mesocyclone associated with TVS
Red	MESO LOWTOP	Mesocyclone (Strength Rank ≥ 5) Low-topped Mesocyclone (Strength Rank ≥ 5)
Orange	CPLT	Couplet (Rank ≥ 5; a MESO with no time association)
Yellow	SHALLW	Low-altitude (boundary-layer) circulation (Rank ≥ 5)
Cyan	2DFT	Long-range (range ≥ 175 km) circulation detected using only one sweep (Rank ≥ 5)
White	CIRC LOWTOP	Weak circulation (Rank < 5) (Strength Rank < 5)

Tornado Algorithm Output

Tornado Algorithm Output for Volume 136

TORNID	TYPE	AZ	RAN	CELLID	MESOID	BASE	TOP	DEPTH	GTG	MX GTG	DIR	SPEED
a	TVS	156	33	1	9	2	13	10	66	87	227	31

Figure 4.3: Tornado Algorithm Output Table showing one detected tornado. If more than one were shown, the most severe in rank would appear at the top of the table.

Abbreviation	Table Element	Color Coding
TORN ID	Tornado Identification Label (a through z)	No color coding
TYPE	Type of Tornadic Circulation	Red .....TVS Yellow .....TVS
AZ	Azimuth of Tornado from radar	No color coding
RAN	Range of Tornado from radar (km)	No color coding
CELL ID	Associated Storm Identification Number	No color coding
MESO ID	Associated Mesocyclone Identification Number	No color coding
BASE	Tornadic circulation base height (kmor kft)	Red ..... At 0.5˚ sweep White ..... Above 0.5˚ sweep

Abbreviation	Table Element	Color Coding
TOP	Tornadic circulation top height (kmor kft)	No color coding
DEPTH	Tornadic circulation depth (kmor kft)	No color coding
LA GTG	Low-altitude gate-to-gate velocity difference	Red ..... > 40 m/s (>78 knots) Yellow 20 - 40 m/s (39-78 knots) Green ..... < 20 m/s (<39 knots)
MX GTG	Maximum gate-to-gate velocity difference	Red.. ..... > 40 m/s (>78 knots) Yellow... 20 - 40 m/s(39-78 knots) Green.. ..... < 20 m/s (<39 knots)
DIR	Tornadic circulation motion direction	No color coding
SPEED	Tornadic circulation motion speed (m/s or knots)	No color coding