Preliminary Analysis of ABFM Data
WSR 11 x 11-km Average (cont.)
WSR 3 x 3-km Average

Harry Koons

11 December 2003

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Sample Statistics and Model Parameters
11 x 11-km

	-2 dBZ	0 dBZ	+2 dBZ	+4 dBZ	+6 dBZ
u, kV/m	0.75	1.0	1.0	1.0	1.5
N	173	271	369	418	374
k	24	32	57	84	60
γ	0.0	0.0	0.0	0.0	0.28
μ	0.81	1.00	1.06	1.09	1.38
σ	0.15	0.30	0.28	0.37	0.90

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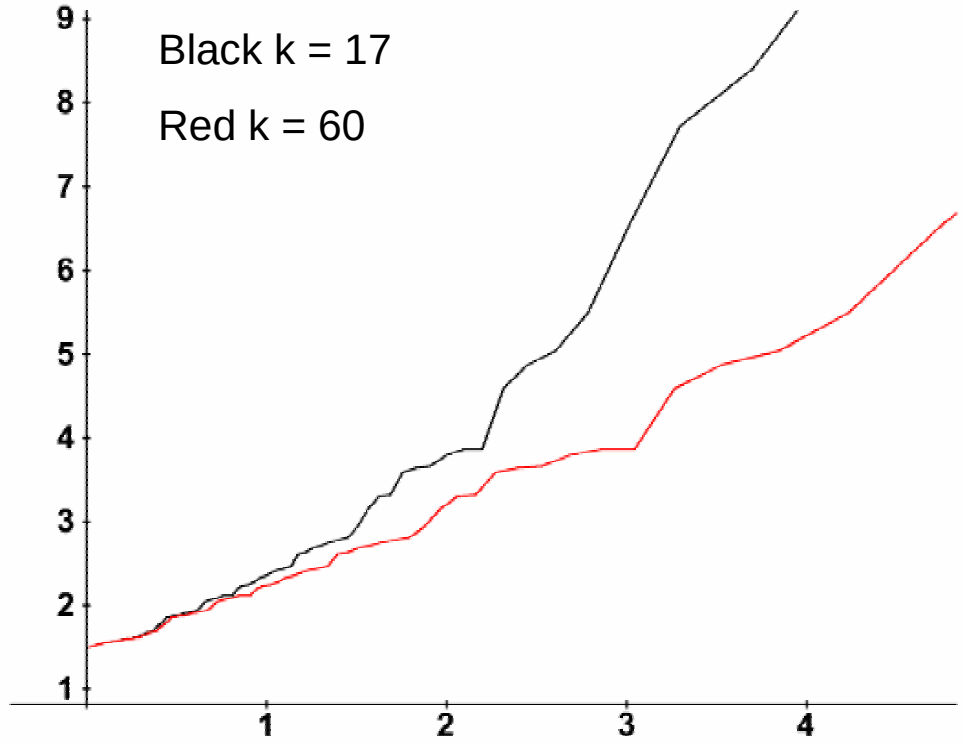
Q-Q Plot for 11 x 11 at +6dBZ



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T-Sample Electric Field Intensity, kV/m

T-Sample	-2 dBZ	0 dBZ	+2 dBZ	+4 dBZ	+6 dBZ
100	1.21	1.74	1.82	2.20	5.16
1,000	1.56	2.43	2.47	3.05	11.53
10,000	1.91	3.12	3.11	3.90	23.72
100,000	2.26	3.81	3.75	4.76	47.07
1,000,000	2.61	4.50	4.39	5.61	91.75
10,000,000	2.96	5.20	5.05	6.46	177.30

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Sample Statistics and Model Parameters
3 x 3 x 3-km Cube

	-2 dBZ	0 dBZ	+2 dBZ	+4 dBZ	+6 dBZ
u, kV/m	1.0	1.0	1.0	1.0	1.5
N	125	165	108	258	259
k	22	21	36	36	24
γ	–0.17	–0.31	–0.27	N	N
μ	1.03	1.02	1.01	N	N
σ	0.36	0.50	0.78	N	N
R	3.15	2.65	3.86	N	N

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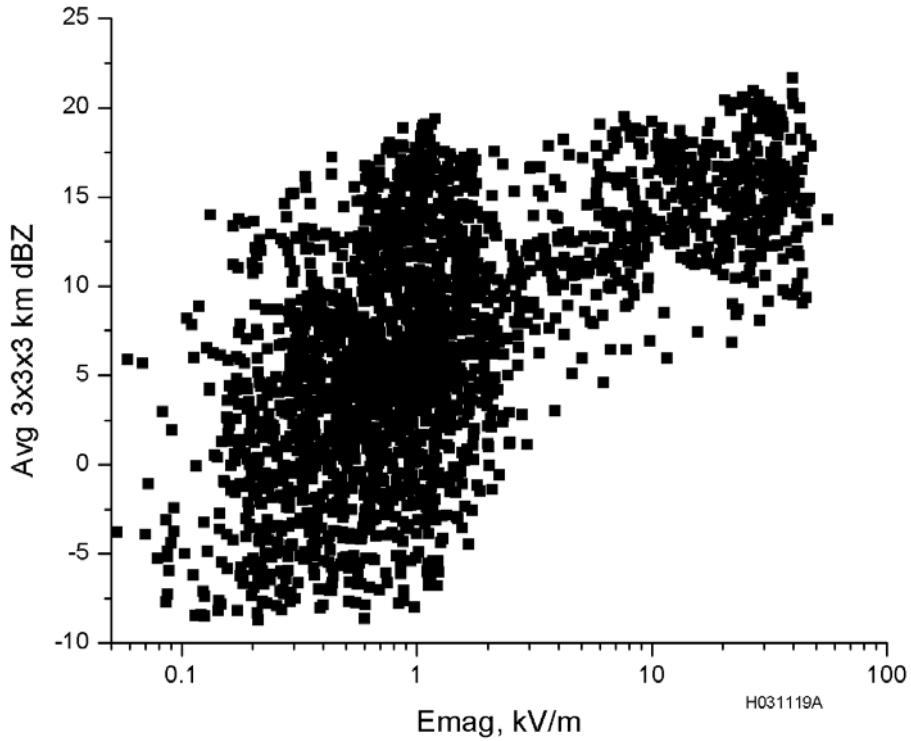
Scatter Plot of dBZ vs Emag
WSR 3 x 3 x 3-km Average



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T-Sample Electric Field Intensity, kV/m
3 x 3 x3-km Cube

T-Sample	-2 dBZ	0 dBZ	+2 dBZ	+4 dBZ	+6 dBZ
100	1.84	1.78	2.76	N	N
1,000	2.26	2.22	3.27	N	N
10,000	2.55	2.44	3.55	N	N
100,000	2.74	2.54	3.69	N	N
1,000,000	2.87	2.60	3.77	N	N
10,000,000	2.96	2.62	3.82	N	N

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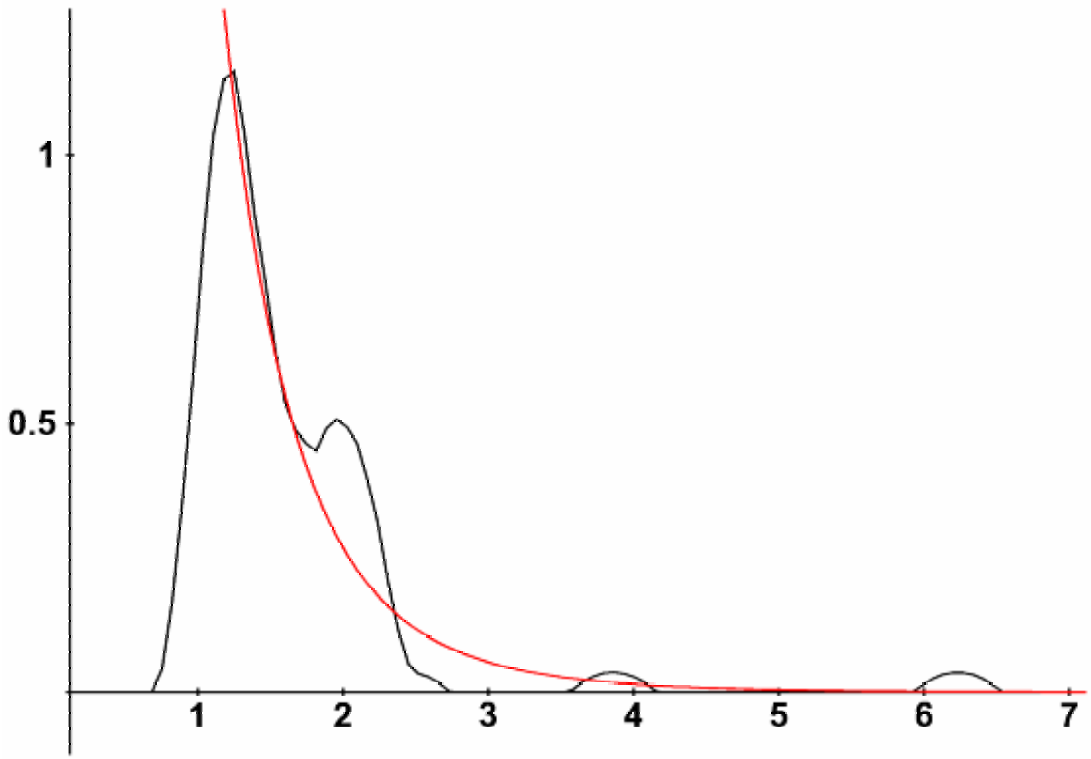
Kernel Density and Model Density
3 x 3 x 3-km Cube; +4 dBZ



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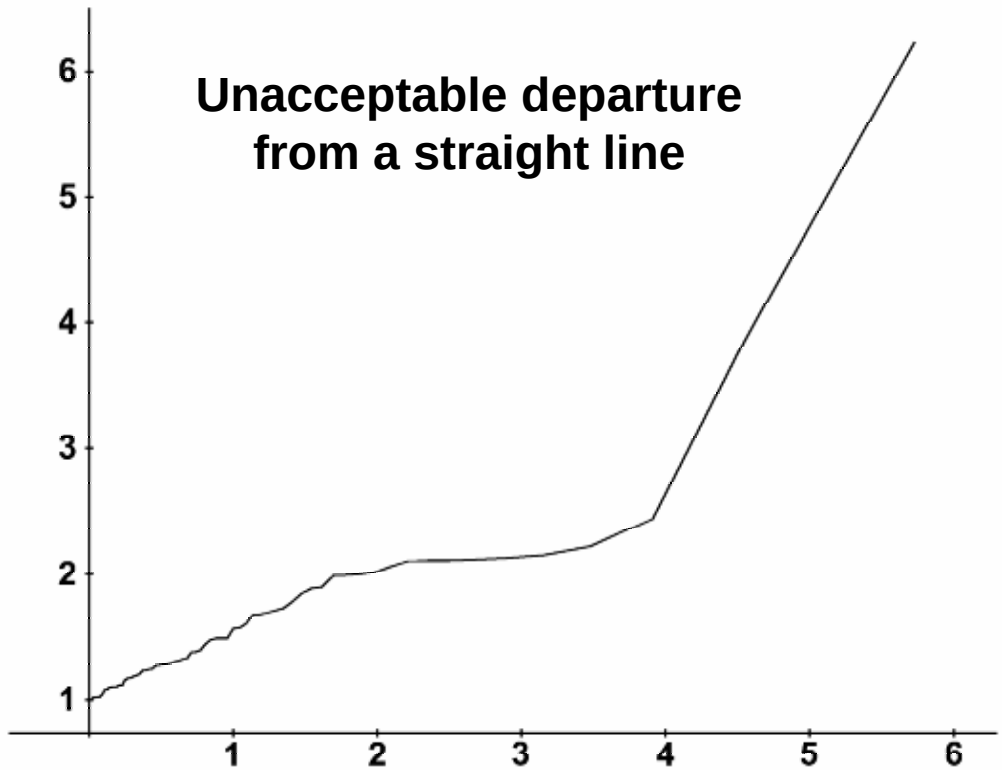
Q-Q Plot
3 x 3 x3-km Cube; +4 dBZ



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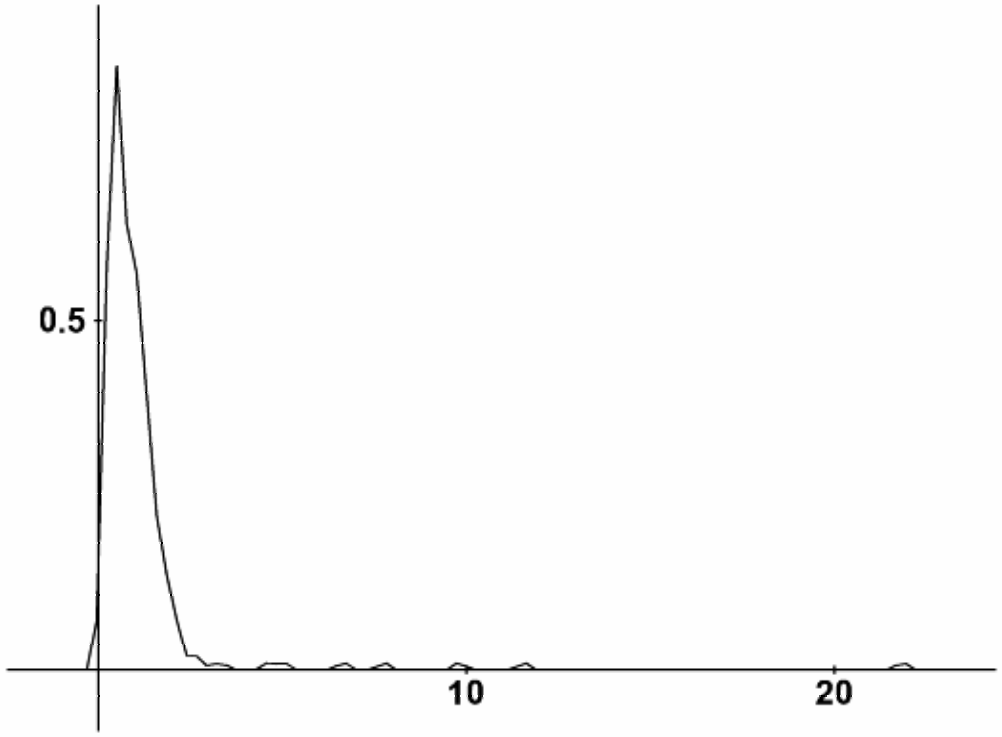
Kernel Density
3 x 3 x 3-km Cube; +6dBZ



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Maximum Electric Field Intensity, kV/m

Volume km^3	-2 dBZ	0 dBZ	+2 dBZ	+4 dBZ	+6 dBZ
3 x 3 x 3	2.09	2.25	2.94	6.23	21.9
11 x 11x t	1.56	2.41	2.24	2.94	10.4

Why are the electric fields for the 3 x 3 x 3-km cube significantly larger than those for the 11 x 11-km column?

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