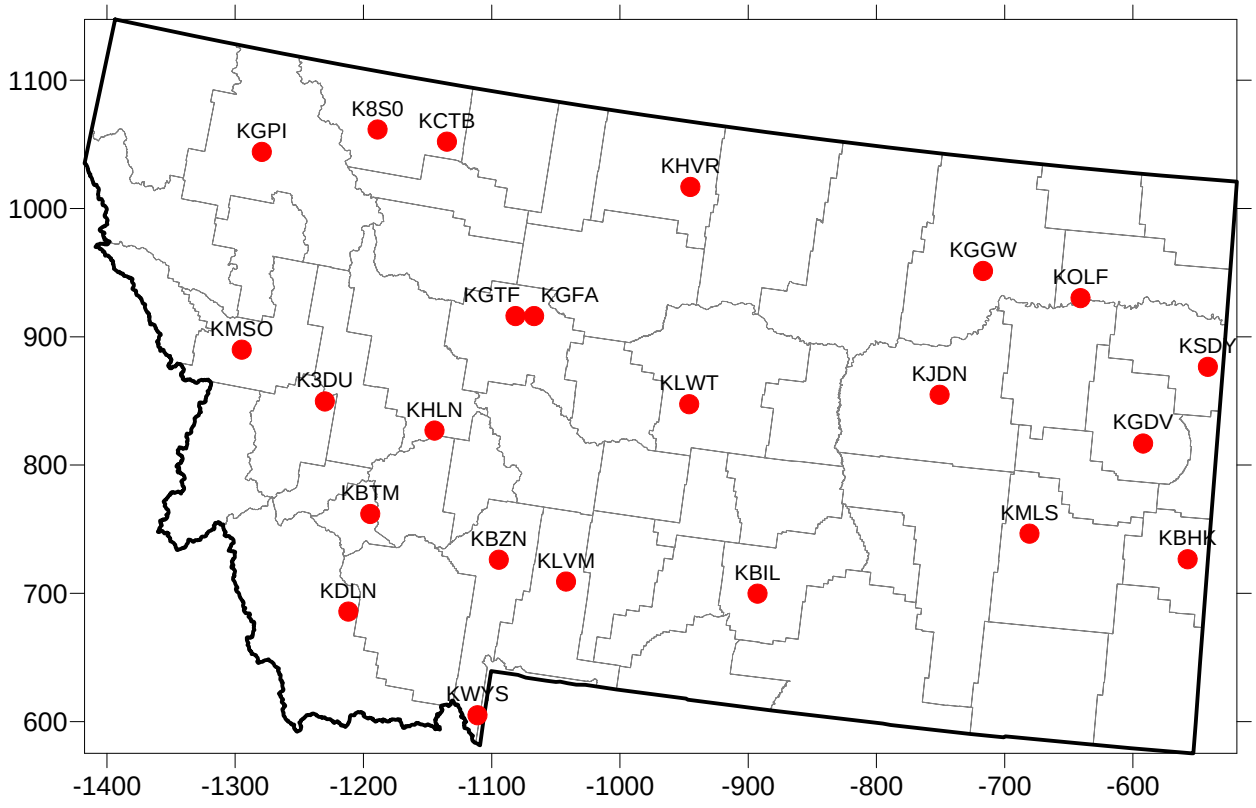


Montana Met Stations

Table 1: Temperature Bias (K) for 2008 WRF by Month and by Station for Montana in the 4km Domain.

Region	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean
MT-K3DU	2.47	0.96	0.05	0.08	0.71	0.32	0.86	1.56	1.60	1.77	1.55	2.22	1.18
MT-KBHK	1.68	0.92	1.20	1.22	0.82	1.13	1.45	1.70	1.77	1.14	1.68	1.94	1.39
MT-KBIL	0.94	0.29	1.06	1.16	1.05	0.48	0.92	1.07	1.47	1.15	1.06	1.14	0.98
MT-KBTM	-0.48	-1.93	-1.43	-0.60	-0.11	-0.53	-0.27	0.31	0.76	0.28	0.93	1.48	-0.13
MT-KBZN	-1.58	-2.15	-1.89	-0.89	-0.49	-1.24	-1.53	-0.74	-0.46	-1.12	-0.43	0.68	-0.99
MT-KCTB	0.36	0.73	0.84	0.41	1.03	0.59	0.86	0.54	1.10	1.00	1.00	1.49	0.83
MT-KDLN	1.23	-0.19	-0.56	0.40	0.76	0.78	0.53	0.82	1.15	0.48	1.44	3.40	0.85
MT-KGDV	1.88	0.80	1.59	1.55	1.26	1.07	0.99	1.25	1.56	1.27	1.65	2.07	1.41
MT-KGFA	-0.15	-0.81	-0.44	-2.17	-0.96	-1.55	-1.29	-0.70	-0.09	-0.86	-0.92	-0.50	-0.87
MT-KGGW	1.26	0.21	1.22	1.33	0.81	1.28	1.34	1.25	1.04	0.83	1.12	1.61	1.11
MT-KGPI	0.24	-0.17	-0.18	-0.48	0.08	-0.15	-0.38	-0.36	0.19	0.53	-0.14	1.00	0.02
MT-KGTF	1.52	0.86	1.20	0.07	1.01	0.45	0.34	0.63	1.28	1.28	1.09	1.86	0.97
MT-KHLN	1.44	0.24	-0.57	-0.96	-0.42	-1.14	-1.34	-0.82	-0.04	0.34	0.21	0.86	-0.18
MT-KHVR	1.51	0.76	1.28	0.67	1.19	1.00	0.99	1.45	1.44	1.71	1.64	2.45	1.34
MT-KJDN	1.14	1.12	0.84	0.97	0.76	0.95	0.65	0.82	0.96	0.36	0.79	1.62	0.92
MT-KLVM	0.57	-1.07	-0.42	-0.50	0.69	0.27	0.07	0.19	1.29	-0.06	0.04	1.19	0.19
MT-KLWT	1.29	1.32	0.87	0.84	0.96	0.74	0.56	1.20	1.34	0.98	1.12	1.50	1.06
MT-KMLS	1.54	1.88	1.20	0.87	0.72	0.77	0.67	0.66	0.58	0.15	0.69	1.69	0.95
MT-KMSO	1.84	-0.03	-0.11	-0.13	0.14	-0.31	-0.69	0.12	1.39	1.78	1.99	2.82	0.73
MT-KOLF	0.93	-0.24	1.45	1.33	1.08	1.00	1.05	1.59	1.84	1.53	1.23	1.83	1.22
MT-KSDY	1.50	-0.75	1.03	0.75	0.09	0.15	0.29	0.88	0.88	0.89	0.87	1.49	0.67

Table 2: Temperature Error (K) for 2008 WRF by Month and by Station for Montana in the 4km Domain.

Region	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean
MT-K3DU	2.12	2.67	1.27	1.56	4.13	2.24	3.89	1.31	5.85	6.93	1.43	3.61	3.08
MT-KBHK	1.79	1.22	1.20	2.16	1.49	1.97	1.23	3.50	1.75	2.55	1.45	NA	1.85
MT-KBIL	0.82	2.33	1.21	1.72	0.90	1.15	1.34	1.70	1.59	2.00	1.44	3.89	1.67
MT-KBTM	3.55	3.71	0.48	0.98	1.22	3.25	2.25	1.26	3.22	5.40	1.60	4.30	2.60
MT-KBZN	4.21	2.46	1.00	1.12	1.73	1.63	1.51	1.58	1.32	3.37	2.64	2.70	2.11
MT-KCTB	1.74	2.02	1.54	2.60	1.21	1.66	1.11	1.98	1.61	2.20	2.23	2.49	1.87
MT-KDLN	1.72	1.70	0.76	1.22	0.87	2.46	1.40	1.18	2.20	2.06	1.35	2.31	1.60
MT-KGDV	2.81	1.98	2.57	2.08	1.19	0.54	1.45	1.89	1.81	1.61	1.26	2.43	1.80
MT-KGFA	1.12	1.63	0.71	NA	2.27	1.39	1.76	2.37	1.15	NA	2.28	1.93	1.66
MT-KGGW	3.14	1.17	1.77	2.91	1.52	1.84	2.27	1.39	1.36	1.77	2.53	2.99	2.06
MT-KGPI	1.54	2.12	2.35	1.61	1.52	2.07	1.52	1.74	2.11	2.87	0.90	2.02	1.86
MT-KGTF	0.88	2.59	1.83	1.46	0.71	1.60	1.31	3.32	1.05	1.92	1.37	1.15	1.60
MT-KHLN	1.91	1.66	1.37	0.88	1.47	1.73	1.70	2.67	1.63	3.59	1.97	3.24	1.99
MT-KHVR	8.83	2.00	0.84	1.33	0.65	1.49	2.03	2.47	2.12	2.63	1.52	3.66	2.46
MT-KJDN	1.48	1.24	1.94	1.86	1.24	1.03	1.45	0.96	2.11	0.79	0.99	3.00	1.51
MT-KLVM	1.30	1.22	1.65	1.48	NA	1.45	1.78	1.72	2.97	4.17	1.07	3.71	2.05
MT-KLWT	1.27	4.23	0.68	1.57	1.66	2.11	1.15	2.55	1.94	2.17	2.21	1.91	1.95
MT-KMLS	2.14	1.60	NA	1.53	1.32	1.30	1.40	1.48	1.26	0.84	1.20	3.74	1.62
MT-KMSO	2.76	3.01	0.68	1.17	1.20	1.61	1.97	1.92	5.02	8.65	1.29	2.84	2.68
MT-KOLF	2.16	1.80	2.30	3.11	1.85	1.42	1.94	1.68	2.05	3.20	2.24	3.23	2.25
MT-KSDY	2.70	1.23	1.76	1.22	1.00	1.13	1.19	1.79	2.86	1.96	1.24	2.33	1.70

Table 3: Humidity Bias (g/kg) for 2008 WRF by Month and by Station for Montana in the 4km Domain.

Region	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean
MT-KBHK	0.43	0.44	0.43	0.45	0.32	0.15	0.29	0.12	-0.27	0.03	0.05	0.28	0.23
MT-KBIL	0.43	0.34	0.33	0.23	0.36	0.36	0.06	-0.03	-0.75	-0.32	-0.10	0.28	0.10
MT-KBTM	0.35	0.31	0.41	0.54	0.56	0.53	0.78	0.29	-0.16	0.15	-0.13	0.22	0.32
MT-KBZN	0.26	0.33	0.24	0.35	0.20	-0.30	-0.01	-0.59	-0.70	-0.09	-0.18	0.29	-0.02
MT-KCTB	0.12	0.56	0.44	0.55	0.51	0.38	NA	NA	NA	NA	NA	NA	0.43
MT-KDLN	0.29	0.27	0.33	0.45	0.40	-0.15	-0.10	-0.36	-0.44	-0.03	-0.18	0.26	0.06
MT-KGDV	0.34	0.29	0.41	0.38	0.08	0.10	0.34	-0.05	-0.31	0.06	0.06	0.33	0.17
MT-KGFA	0.23	0.30	-0.21	0.64	-0.23	-0.32	-0.08	-0.23	-0.64	0.27	0.17	0.28	0.02
MT-KGGW	0.38	0.27	0.59	0.47	0.44	-0.31	-0.12	-0.02	-0.24	0.03	0.11	0.29	0.16
MT-KGPI	0.37	0.35	0.33	0.64	0.66	0.60	0.57	0.34	-0.28	-0.19	-0.13	0.05	0.28
MT-KGTF	0.30	0.39	0.43	0.79	0.60	0.31	0.52	0.47	-0.23	0.14	0.08	0.32	0.34
MT-KHLN	0.35	0.38	0.41	0.64	0.44	0.47	0.56	-0.04	-0.35	-0.08	-0.11	0.27	0.25
MT-KHVR	0.34	0.38	0.60	0.64	0.38	-0.02	-0.29	0.04	-0.40	0.17	0.04	0.25	0.18
MT-KJDN	0.46	0.48	0.34	0.34	0.04	-0.36	0.34	0.18	0.02	0.10	0.02	0.37	0.19
MT-KLVM	0.21	0.52	0.38	0.50	0.47	0.14	0.42	-0.04	-0.64	0.04	0.04	0.28	0.19
MT-KLWT	0.21	0.37	0.45	0.58	0.66	0.30	0.37	-0.04	-0.40	0.10	0.17	0.35	0.26
MT-KMLS	0.44	0.52	0.40	0.31	0.12	-0.36	0.05	0.17	-0.26	0.06	0.00	0.41	0.16
MT-KMSO	0.39	0.04	0.17	0.64	0.71	0.69	0.92	-0.09	-0.80	-0.37	-0.12	0.10	0.19
MT-KOLF	0.44	0.31	0.44	0.56	0.41	0.18	0.20	-0.03	-0.40	0.06	0.09	0.34	0.22
MT-KSDY	0.40	0.30	0.45	0.37	0.44	0.37	-0.07	-0.36	-0.27	0.03	0.17	0.32	0.18

Table 4: Humidity Error (g/kg) for 2008 WRF by Month and by Station for Montana in the 4km Domain.

Region	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean
MT-KBHK	0.45	0.48	0.49	0.54	0.71	0.83	1.04	0.79	0.79	0.46	0.36	0.32	0.61
MT-KBIL	0.46	0.40	0.47	0.50	0.63	0.88	0.89	0.78	0.94	0.62	0.40	0.34	0.61
MT-KBTM	0.43	0.51	0.52	0.64	0.67	0.81	1.12	0.78	0.55	0.58	0.37	0.37	0.61
MT-KBZN	0.43	0.46	0.46	0.57	0.54	0.64	0.94	0.95	0.93	0.59	0.45	0.48	0.62
MT-KCTB	0.31	0.63	0.50	0.67	0.72	0.84	NA	NA	NA	NA	NA	NA	0.61
MT-KDLN	0.37	0.44	0.54	0.62	0.65	0.63	0.94	0.77	0.66	0.53	0.39	0.43	0.58
MT-KGDV	0.39	0.38	0.52	0.53	0.70	0.68	1.06	0.79	0.77	0.52	0.35	0.35	0.59
MT-KGFA	0.34	0.41	0.47	0.81	0.76	0.86	0.81	0.75	0.85	0.48	0.35	0.34	0.60
MT-KGGW	0.41	0.36	0.65	0.63	0.73	0.75	0.95	0.74	0.66	0.51	0.39	0.31	0.59
MT-KGPI	0.50	0.54	0.44	0.75	0.82	0.93	0.98	0.85	0.68	0.54	0.43	0.39	0.65
MT-KGTF	0.38	0.47	0.49	0.85	0.73	0.66	0.86	0.78	0.59	0.43	0.41	0.37	0.59
MT-KHLN	0.45	0.49	0.51	0.69	0.67	0.75	0.98	0.73	0.70	0.47	0.41	0.43	0.61
MT-KHVR	0.39	0.45	0.67	0.74	0.70	0.62	1.00	0.63	0.77	0.55	0.44	0.34	0.61
MT-KJDN	0.51	0.53	0.51	0.51	0.69	0.78	1.06	0.71	0.62	0.60	0.39	0.41	0.61
MT-KLVM	0.34	0.59	0.53	0.69	0.65	0.67	0.99	0.74	0.81	0.54	0.37	0.43	0.61
MT-KLWT	0.34	0.43	0.53	0.67	0.82	0.75	0.85	0.70	0.72	0.50	0.41	0.39	0.59
MT-KMLS	0.46	0.55	0.47	0.52	0.72	0.82	1.11	0.82	0.74	0.55	0.40	0.42	0.63
MT-KMSO	0.57	0.40	0.47	0.72	0.91	0.99	1.21	0.89	0.94	0.61	0.46	0.45	0.72
MT-KOLF	0.46	0.38	0.59	0.68	0.77	0.67	0.97	0.85	0.76	0.62	0.41	0.36	0.63
MT-KSDY	0.42	0.38	0.57	0.57	0.73	0.79	1.02	0.93	0.73	0.59	0.41	0.34	0.62

Table 5: Wind Direction Bias (deg.) for 2008 WRF by Month and by Station for Montana in the 4km Domain.

Region	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean
MT-K3DU	-13.31	NA	19.43	-16.97	-76.66	-0.25	-3.72	-4.23	NA	NA	-37.48	NA	-16.65
MT-K8S0	12.47	17.98	-1.26	22.75	40.74	13.64	8.57	-23.67	7.30	12.68	35.85	6.01	12.76
MT-KBHK	-6.99	2.06	3.62	18.41	8.12	9.30	17.28	21.78	-0.62	7.57	4.48	NA	7.73
MT-KBIL	-3.39	-0.52	-6.62	-45.81	-2.11	1.84	-23.60	-6.02	11.70	-15.24	-9.37	33.78	-5.45
MT-KBTM	16.12	-11.25	-3.23	-3.88	-7.14	-39.88	-0.55	-0.49	-48.92	-60.08	44.03	-16.59	-10.99
MT-KBZN	-58.53	7.34	7.17	57.29	-17.16	39.48	4.79	8.96	33.40	7.80	12.27	17.55	10.03
MT-KCTB	5.70	-4.78	-4.16	14.40	-32.90	1.21	-0.26	5.77	-10.13	-18.80	-18.24	10.28	-4.33
MT-KDLN	0.33	-0.15	-25.21	18.99	-12.58	-7.58	26.00	-20.12	-9.14	5.18	32.62	15.04	1.95
MT-KGDV	6.55	3.09	23.69	43.42	8.20	-8.58	13.89	-10.87	23.22	3.63	1.01	31.35	11.55
MT-KGFA	14.57	4.92	22.32	NA	32.50	14.88	27.68	28.02	-1.31	NA	22.70	25.03	19.13
MT-KGGW	1.98	-4.48	-24.88	-47.65	10.80	7.74	10.11	-0.11	-12.75	-4.05	1.46	-13.71	-6.30
MT-KGPI	-33.05	-10.05	-28.97	0.37	56.73	-27.57	-31.68	-34.52	13.08	-4.14	43.03	4.90	-4.32
MT-KGTF	8.34	-7.36	10.33	21.44	13.31	-3.59	29.48	29.80	4.66	25.00	4.42	8.48	12.03
MT-KHLN	3.01	-36.55	24.18	12.74	32.09	-6.20	-3.89	-15.77	0.79	28.21	2.24	-78.03	-3.10
MT-KHVR	55.19	-3.33	42.71	14.39	23.56	-1.69	-2.03	6.13	-16.79	24.46	-2.40	0.99	11.77
MT-KJDN	11.79	-12.16	15.32	-7.79	-4.26	11.92	-4.68	-7.68	-10.61	-21.45	2.89	24.27	-0.20
MT-KLVM	-15.55	-27.14	32.99	5.78	NA	-3.73	-11.52	16.45	-8.56	14.99	-3.58	-8.96	-0.80
MT-KLWT	1.06	42.56	16.29	-10.03	21.91	8.06	16.46	49.52	8.50	5.44	32.56	15.08	17.28
MT-KMLS	25.86	16.39	NA	1.19	9.41	-11.16	13.95	-15.16	27.76	-12.12	-2.61	39.33	8.44
MT-KMSO	-50.28	7.06	-79.66	9.84	-17.86	23.40	-15.22	25.39	-47.69	-37.12	-26.84	-29.18	-19.85
MT-KOLF	-14.41	16.16	-0.17	15.77	22.92	7.69	11.01	-6.65	19.14	-7.90	11.67	-4.26	5.91
MT-KSDY	-12.67	-14.98	14.46	15.51	-8.57	-6.77	5.08	-11.84	-8.51	-12.45	-8.43	12.37	-3.07

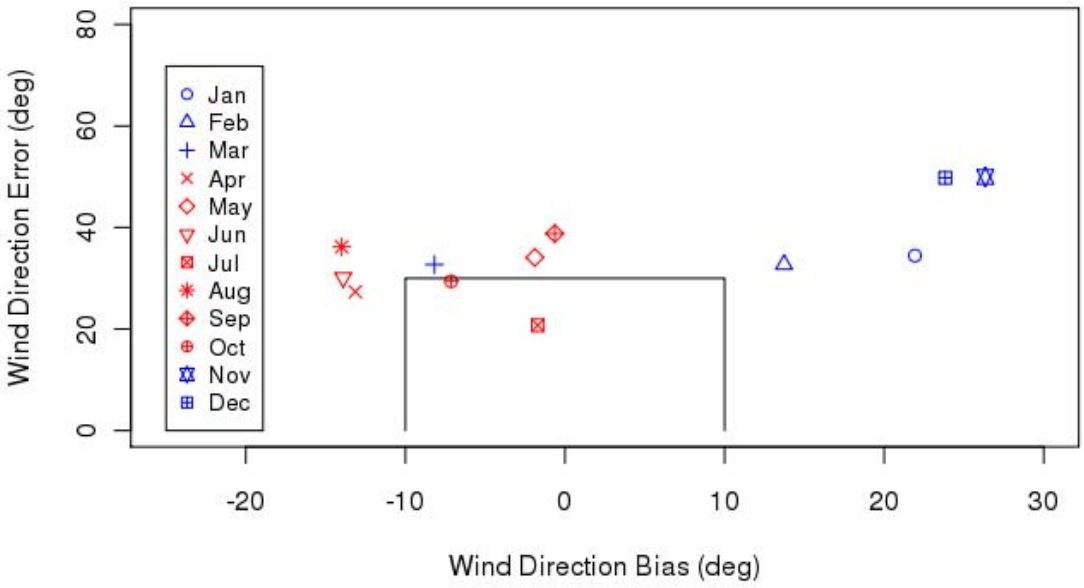
Table 6: Wind Direction Error (deg.) for 2008 WRF by Month and by Station for Montana in the 4km Domain.

Region	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean
MT-K3DU	13.31	NA	19.43	16.97	76.66	12.64	19.18	4.23	NA	NA	37.48	NA	24.99
MT-K8S0	21.68	26.20	41.46	22.75	44.50	23.46	18.53	35.08	21.19	41.87	35.85	11.84	28.70
MT-KBHK	13.91	9.86	10.56	34.95	21.03	17.04	23.87	38.66	22.69	13.48	8.88	NA	19.54
MT-KBIL	8.85	28.96	17.23	65.45	33.34	19.88	29.16	25.65	47.56	50.59	24.57	46.63	33.16
MT-KBTM	43.60	43.83	25.72	22.30	53.16	71.88	34.54	77.21	53.12	63.07	53.87	49.37	49.31
MT-KBZN	77.72	37.46	74.45	74.89	34.74	78.03	47.22	56.35	46.87	38.51	70.44	44.56	56.77
MT-KCTB	26.08	20.42	17.82	17.12	47.40	25.97	14.97	14.14	24.72	32.33	32.72	16.02	24.14
MT-KDLN	21.49	19.45	75.58	45.01	31.93	34.49	29.23	77.37	23.34	22.85	62.11	18.88	38.48
MT-KGDV	41.92	22.04	29.06	81.56	21.54	32.20	26.95	23.65	55.06	32.80	8.24	33.36	34.03
MT-KGFA	14.90	17.55	40.32	NA	43.65	25.14	28.71	35.11	25.03	NA	37.14	25.03	29.26
MT-KGGW	11.02	26.32	31.55	47.65	39.51	11.42	23.22	17.80	27.54	24.01	9.61	23.61	24.44
MT-KGPI	33.65	50.00	45.38	67.28	85.40	77.31	36.04	39.18	74.16	62.22	105.06	48.19	60.32
MT-KGTF	8.75	26.01	17.63	34.73	51.67	24.28	30.02	36.39	27.43	44.62	26.59	13.06	28.43
MT-KHLN	18.75	56.88	25.43	14.21	54.31	39.22	27.10	35.17	20.09	60.54	13.99	78.15	36.99
MT-KHVR	88.62	12.46	46.90	27.99	39.15	21.15	11.64	21.75	24.73	40.30	21.53	29.36	32.13
MT-KJDN	38.72	21.08	25.33	31.60	17.95	19.43	21.51	27.88	13.70	29.37	9.44	37.34	24.45
MT-KLVM	15.75	35.28	62.58	30.06	NA	34.28	35.83	32.78	24.07	42.08	15.49	42.52	33.70
MT-KLWT	6.98	55.02	31.38	25.64	54.65	25.01	32.85	55.65	42.08	13.95	40.32	27.05	34.22
MT-KMLS	31.01	30.44	NA	23.85	21.62	23.46	27.27	28.12	60.85	30.10	7.99	41.52	29.66
MT-KMSO	68.10	92.17	79.66	25.05	60.00	73.18	31.82	47.27	62.76	54.40	95.98	63.99	62.87
MT-KOLF	34.88	20.11	16.69	72.34	29.13	40.19	18.41	12.88	19.19	13.39	20.80	30.09	27.34
MT-KSDY	21.37	14.98	29.63	48.76	17.91	24.00	34.91	20.12	23.36	18.78	10.95	21.43	23.85

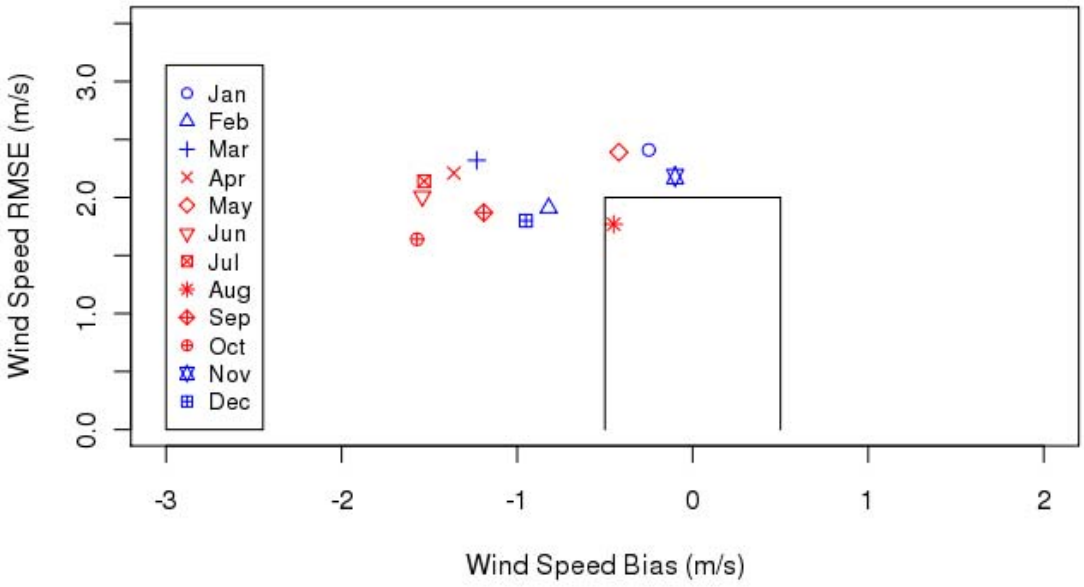
Table 7: Wind Speed RMSE (m/s) for 2008 WRF by Month and by Station for Montana in the 4km Domain.

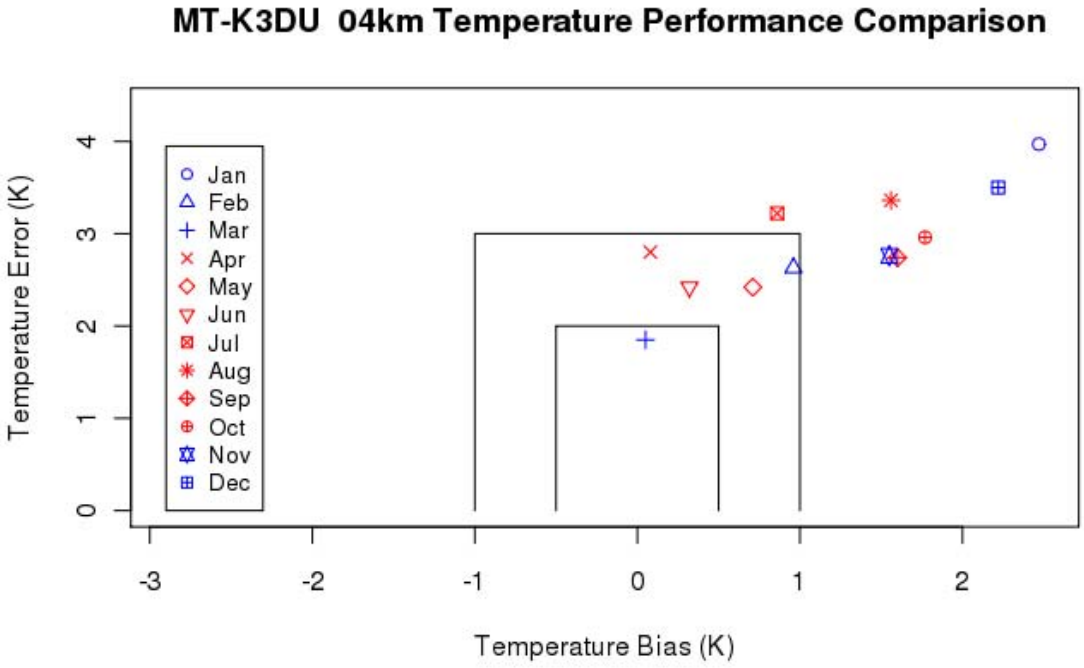
Region	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean
MT-K3DU	NA	NA	NA	0.92	NA	NA	NA	NA	NA	NA	NA	NA	0.92
MT-K8S0	2.98	2.02	1.96	2.33	1.28	1.31	2.11	0.87	1.28	1.31	2.73	3.64	1.99
MT-KBHK	1.45	1.03	1.27	3.62	1.51	1.65	2.01	1.86	1.02	1.62	2.35	NA	1.76
MT-KBIL	2.71	2.44	1.88	1.83	2.58	2.40	1.64	1.87	2.26	2.96	1.71	2.33	2.22
MT-KBTM	1.75	1.70	1.83	1.38	1.73	1.86	1.44	1.45	1.10	1.43	1.43	3.29	1.70
MT-KBZN	3.37	1.78	2.32	2.74	2.24	1.41	1.95	1.49	1.00	2.09	2.34	1.80	2.04
MT-KCTB	1.93	1.93	1.47	1.96	2.60	1.09	2.67	2.20	1.29	1.37	1.93	3.14	1.97
MT-KDLN	3.39	2.19	2.62	3.01	1.83	2.86	1.79	2.60	1.81	2.86	1.60	1.80	2.36
MT-KGDV	1.66	1.51	1.56	3.30	1.93	2.23	2.23	2.39	1.63	1.26	1.27	1.35	1.86
MT-KGFA	2.38	2.08	1.72	NA	1.99	1.48	1.76	2.71	1.26	NA	1.68	1.90	1.90
MT-KGGW	1.34	1.85	1.38	4.31	1.48	1.29	1.27	3.43	1.30	1.40	2.52	1.81	1.95
MT-KGPI	1.73	0.94	1.69	2.23	1.54	2.40	1.62	3.79	1.33	1.47	1.14	2.93	1.90
MT-KGTF	1.76	2.07	1.33	1.99	1.74	1.77	2.36	2.97	1.42	2.47	2.35	1.77	2.00
MT-KHLN	1.65	1.80	1.61	2.22	1.22	1.94	1.41	2.40	0.84	1.29	1.94	1.48	1.65
MT-KHVR	3.66	1.84	1.79	2.89	2.39	1.31	1.68	1.87	1.77	1.72	1.59	2.24	2.06
MT-KJDN	2.72	1.50	1.37	2.82	1.12	1.15	1.01	2.50	1.35	0.97	2.99	2.69	1.85
MT-KLVM	1.80	2.40	2.02	3.94	NA	2.06	1.88	1.79	2.34	1.60	2.75	2.25	2.26
MT-KLWT	1.40	2.29	1.26	1.78	1.33	1.36	2.10	3.05	1.04	1.60	1.83	2.06	1.76
MT-KMLS	1.73	1.36	NA	3.55	1.28	2.36	2.10	2.24	1.71	1.65	1.72	2.27	2.00
MT-KMSO	1.94	1.22	NA	1.75	1.24	2.11	0.78	1.48	1.19	1.97	1.32	2.73	1.61
MT-KOLF	1.12	1.62	1.43	3.37	1.57	1.30	1.77	2.60	1.63	1.01	2.79	1.24	1.79
MT-KSDY	2.11	1.18	0.83	1.91	1.64	0.95	2.66	1.89	1.41	1.86	2.52	1.22	1.68

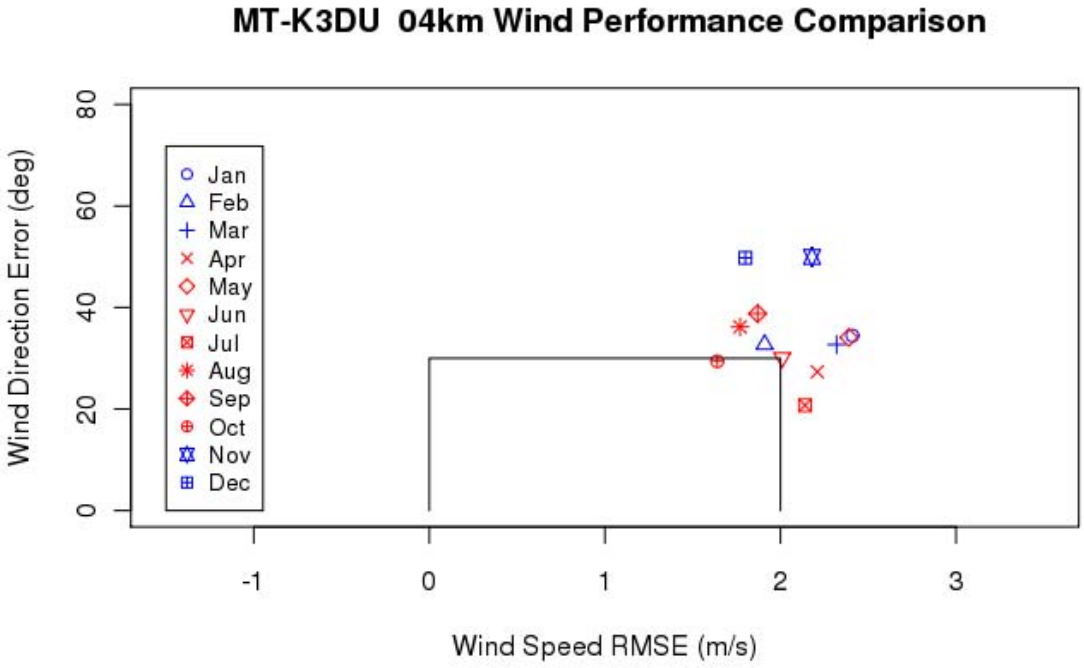
MT-K3DU 04km Wind Direction Performance Comparison

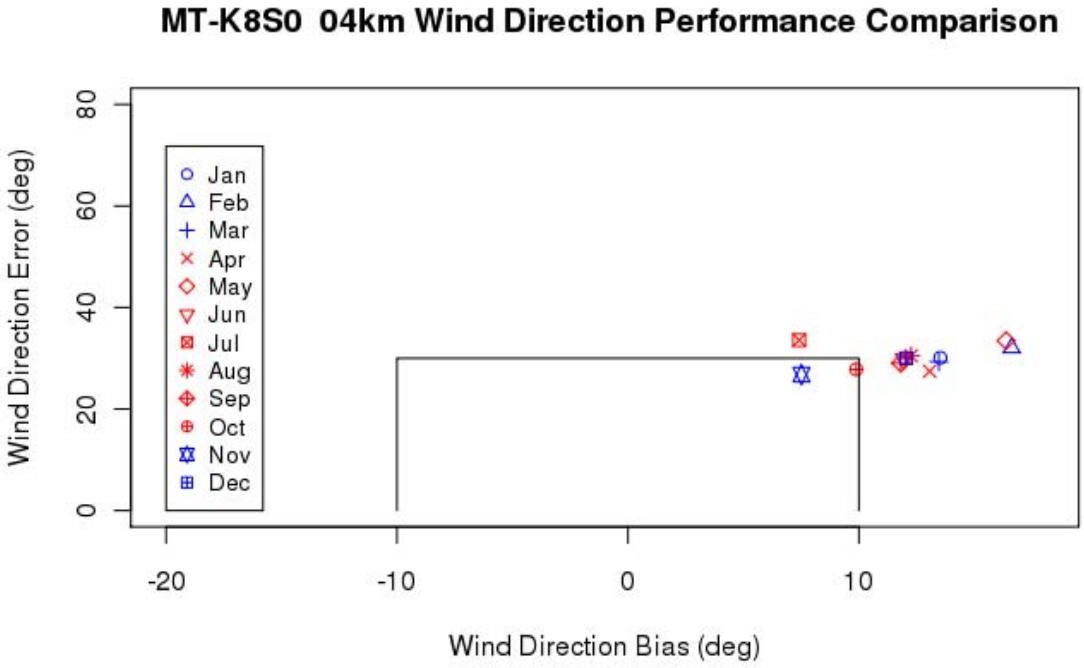


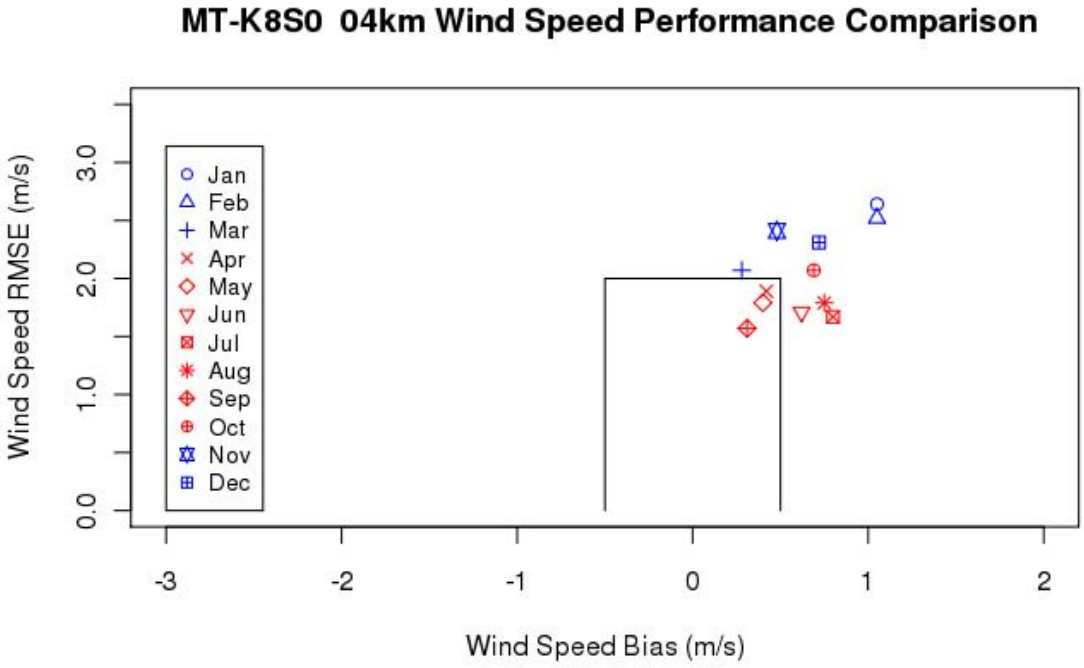
MT-K3DU 04km Wind Speed Performance Comparison



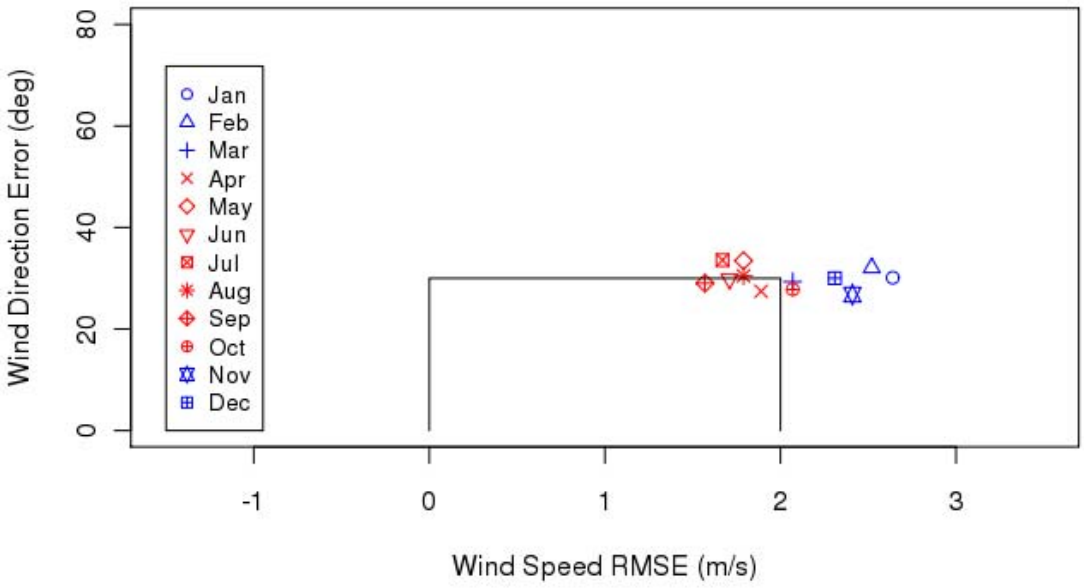

MT-K3DU 04km Temperature Performance Comparison
Temperature Error (K)
Temperature Bias (K)
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
0
1
2
3
4
-3
-2
-1
0
1
2


MT-K3DU 04km Wind Performance Comparison
Wind Direction Error (deg)
Wind Speed RMSE (m/s)
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
0
20
40
60
80
-1
0
1
2
3

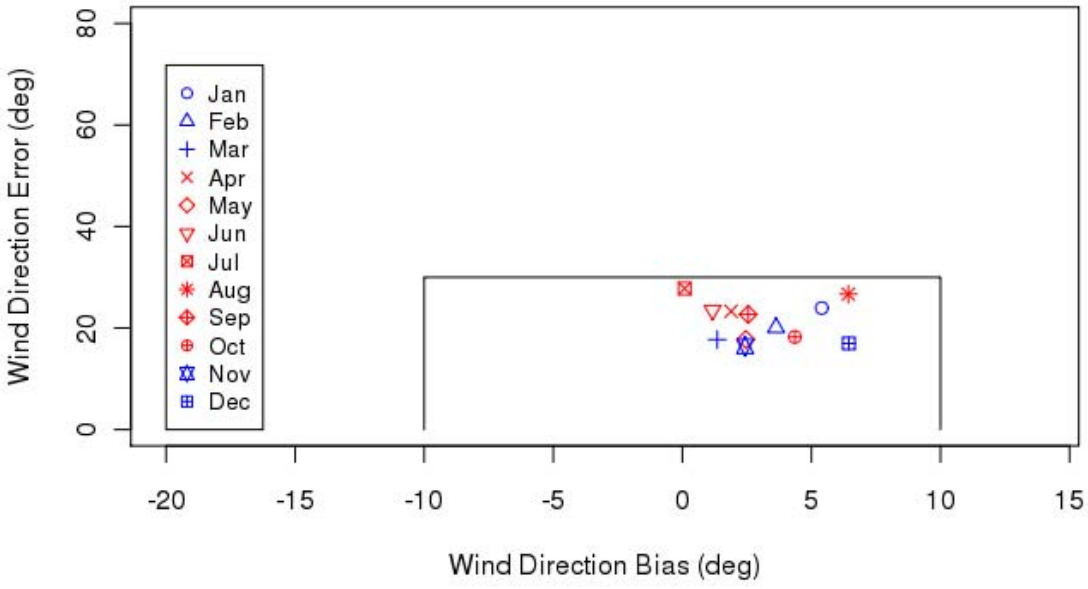

MT-K8S0 04km Wind Direction Performance Comparison
Wind Direction Error (deg)
0
20
40
60
80
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
-20
-10
0
10
Wind Direction Bias (deg)


MT-K8S0 04km Wind Speed Performance Comparison
Wind Speed RMSE (m/s)
0.0
1.0
2.0
3.0
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
-3
-2
-1
0
1
2
Wind Speed Bias (m/s)

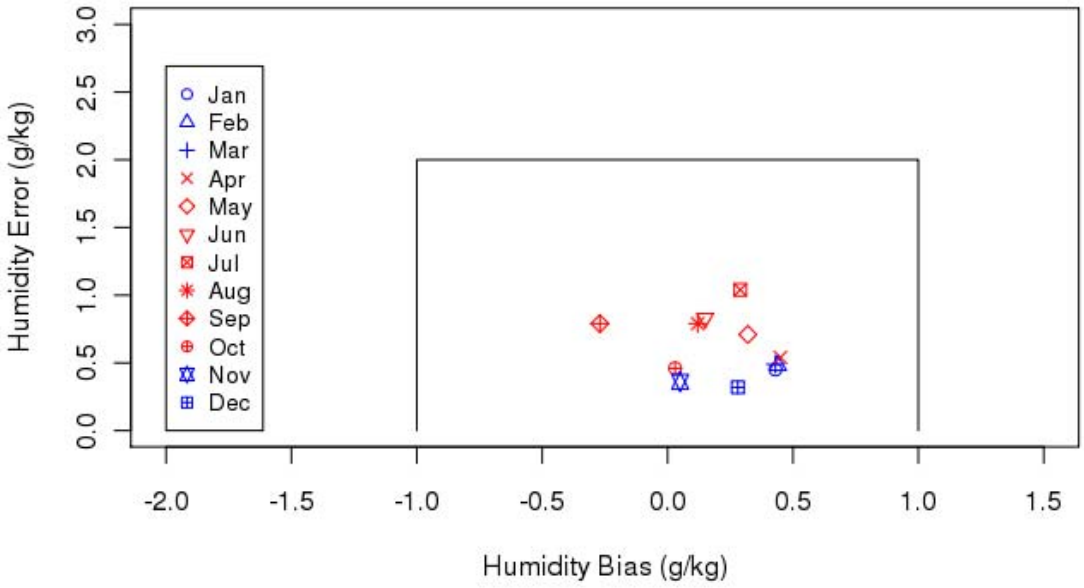
MT-K8S0 04km Wind Performance Comparison



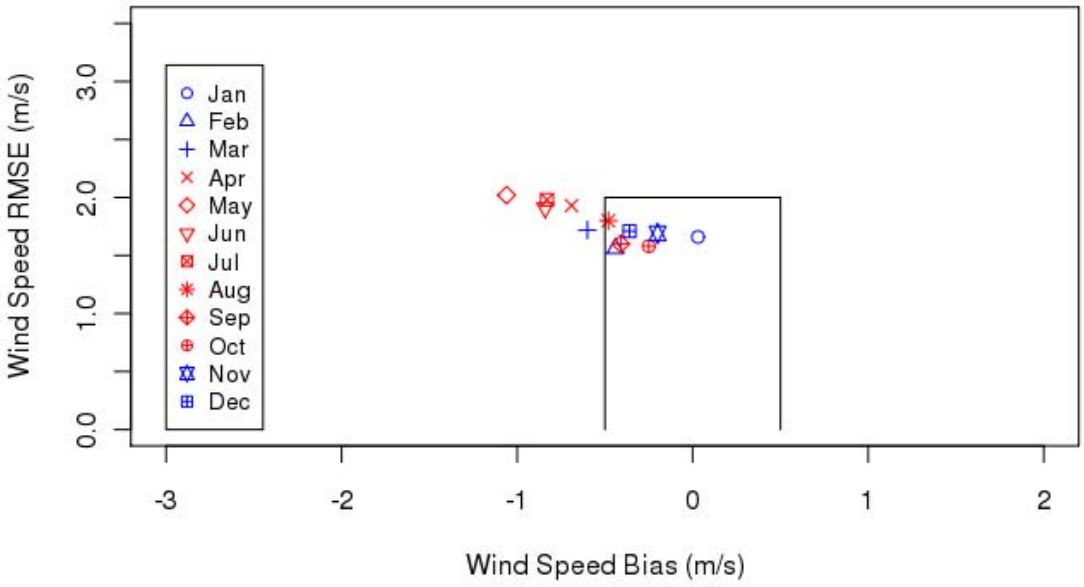
MT-KBHK 04km Wind Direction Performance Comparison



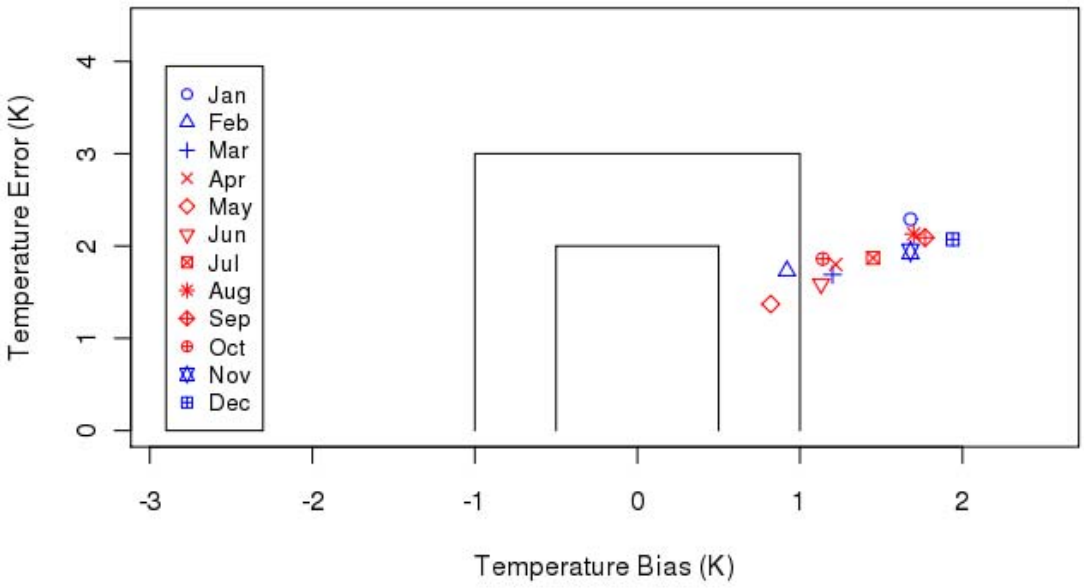
MT-KBHK 04km Humidity Performance Comparison



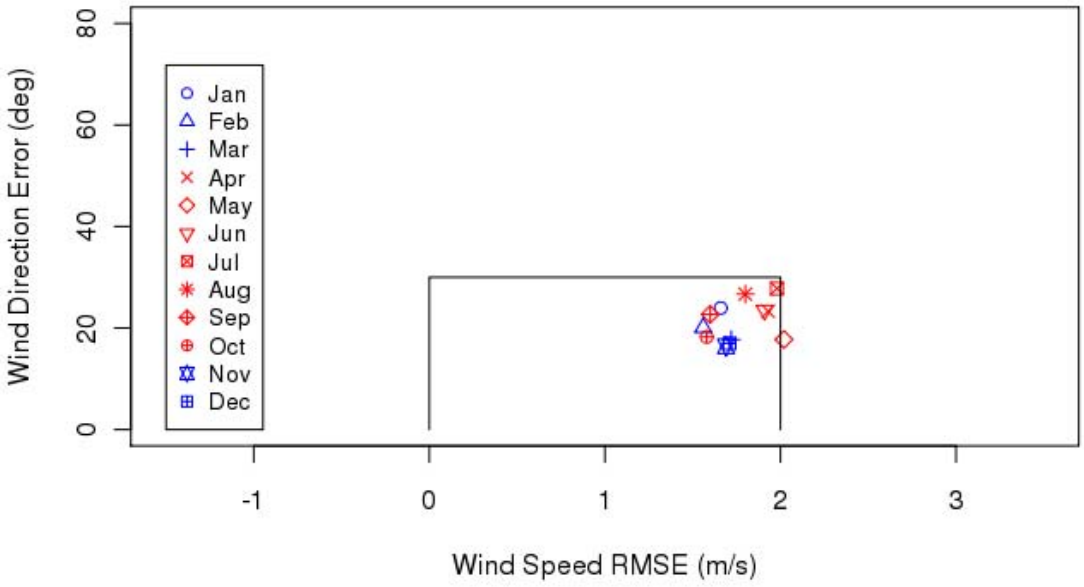
MT-KBHK 04km Wind Speed Performance Comparison



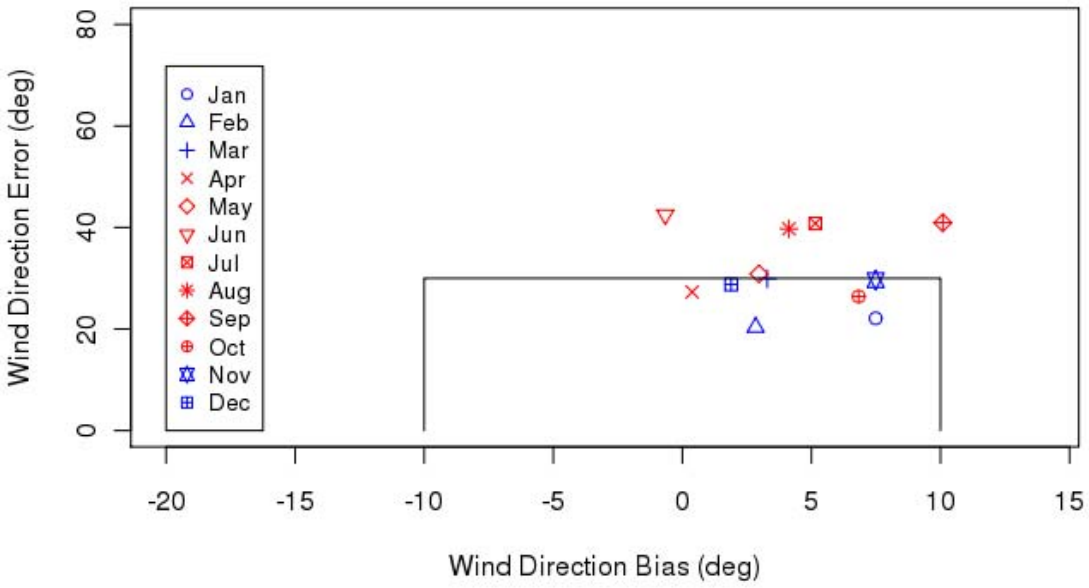
MT-KBHK 04km Temperature Performance Comparison



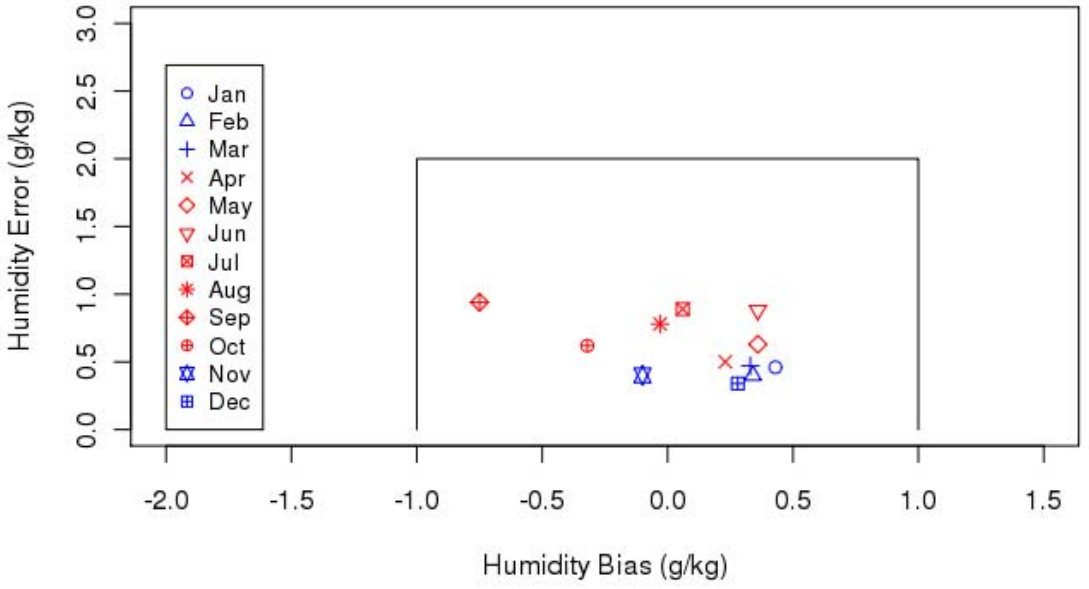
MT-KBHK 04km Wind Performance Comparison



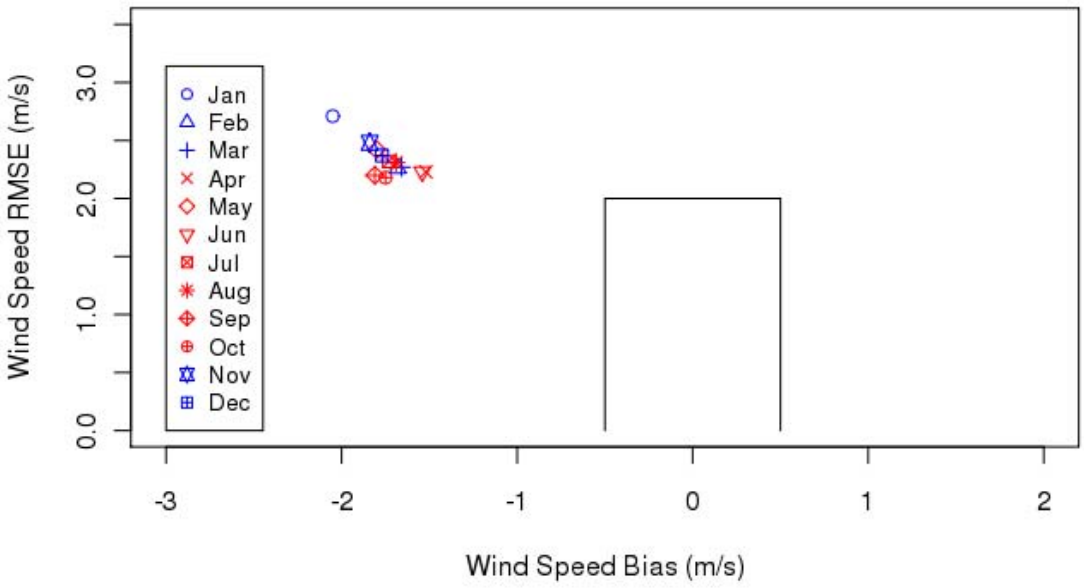
MT-KBIL 04km Wind Direction Performance Comparison



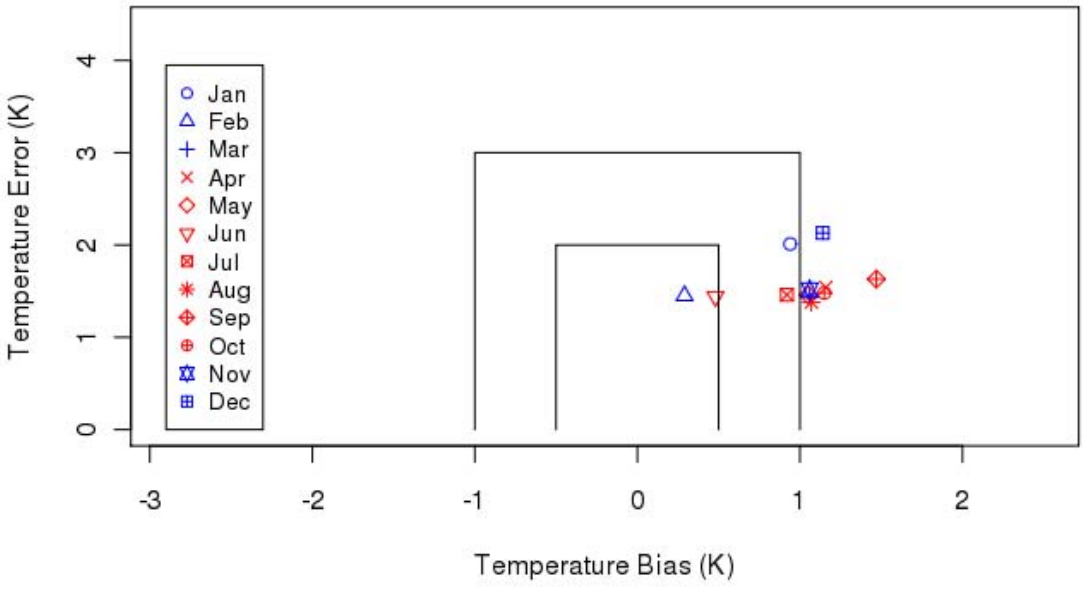
MT-KBIL 04km Humidity Performance Comparison



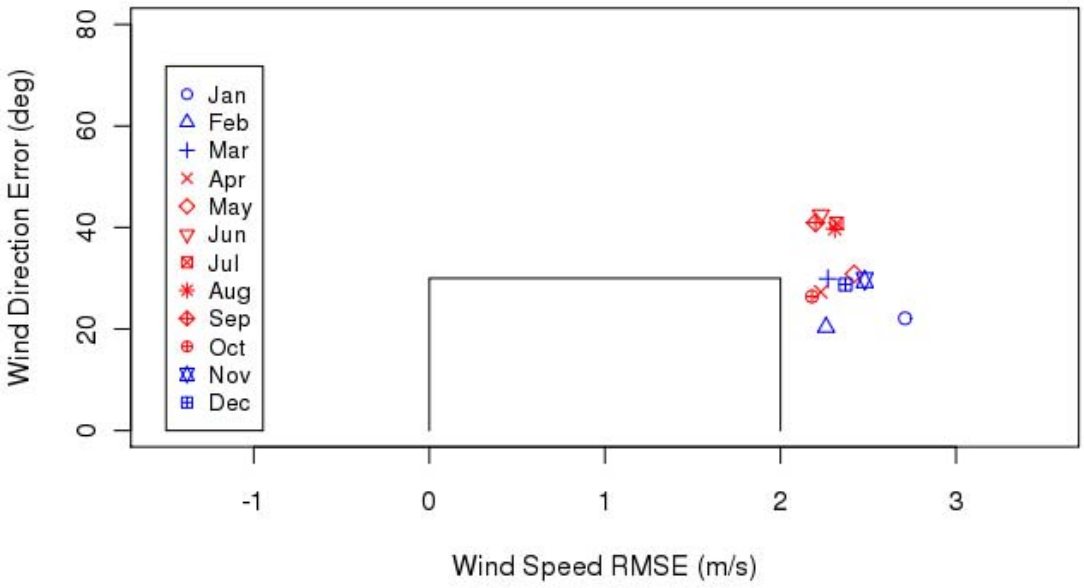
MT-KBIL 04km Wind Speed Performance Comparison



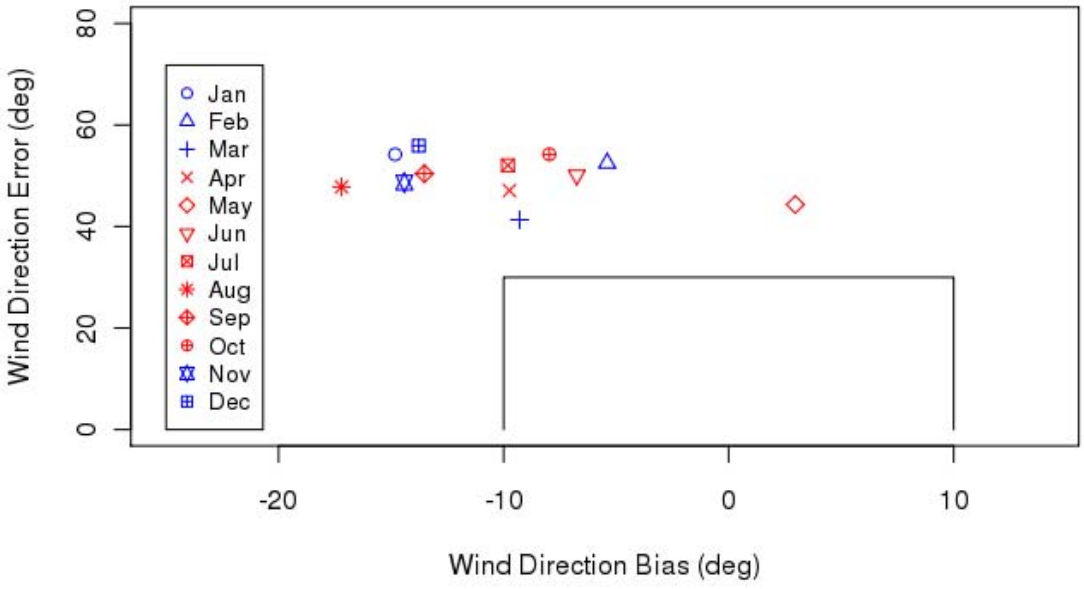
MT-KBIL 04km Temperature Performance Comparison



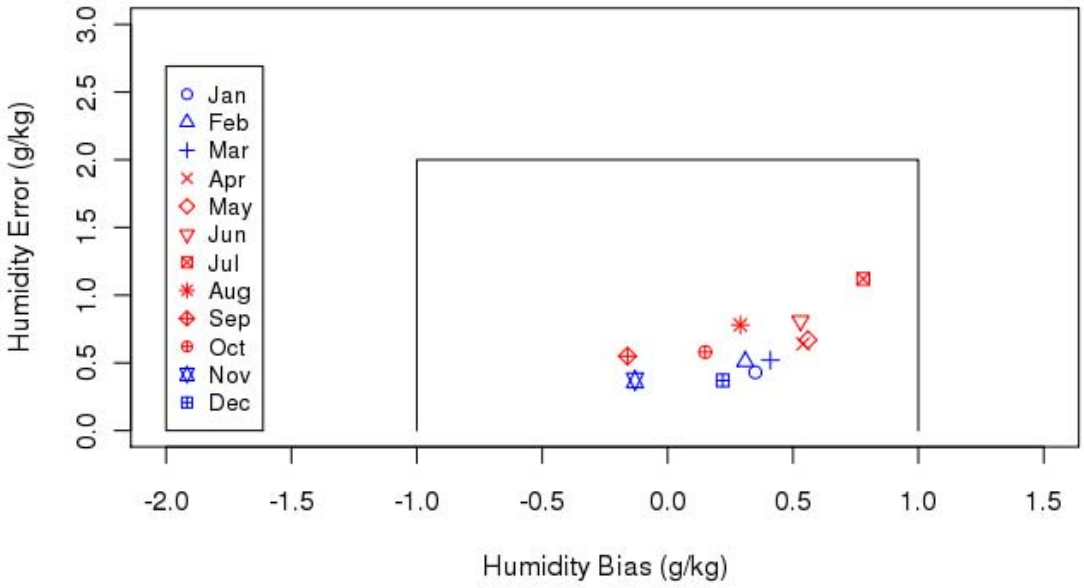
MT-KBIL 04km Wind Performance Comparison



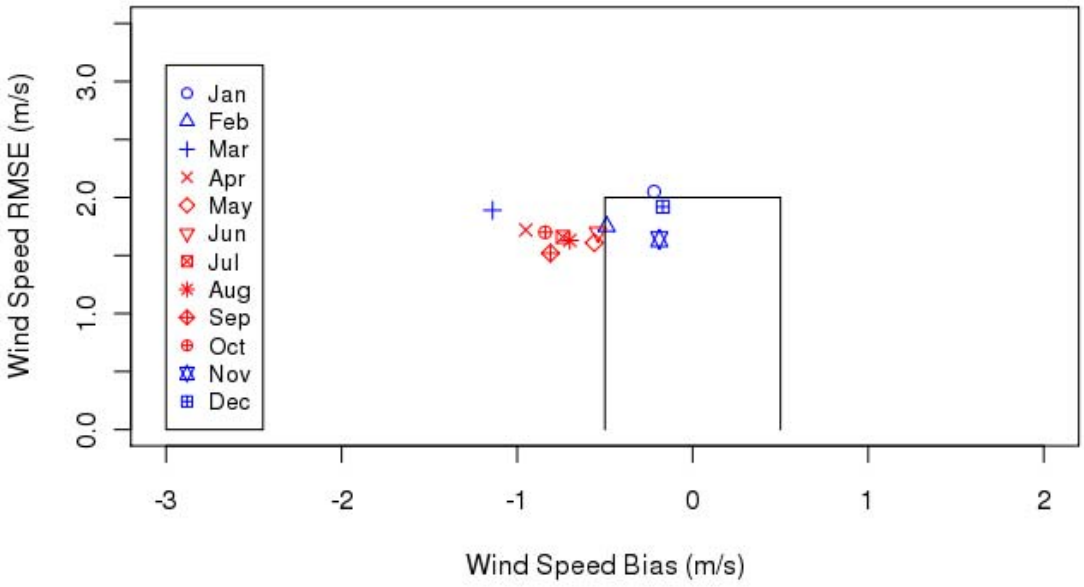
MT-KBTM 04km Wind Direction Performance Comparison



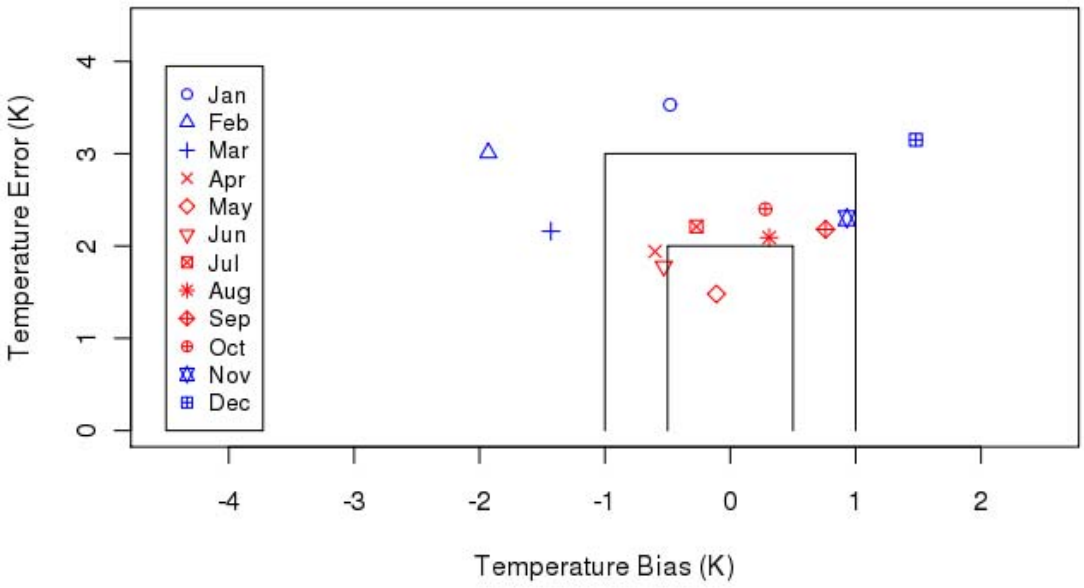
MT-KBTM 04km Humidity Performance Comparison



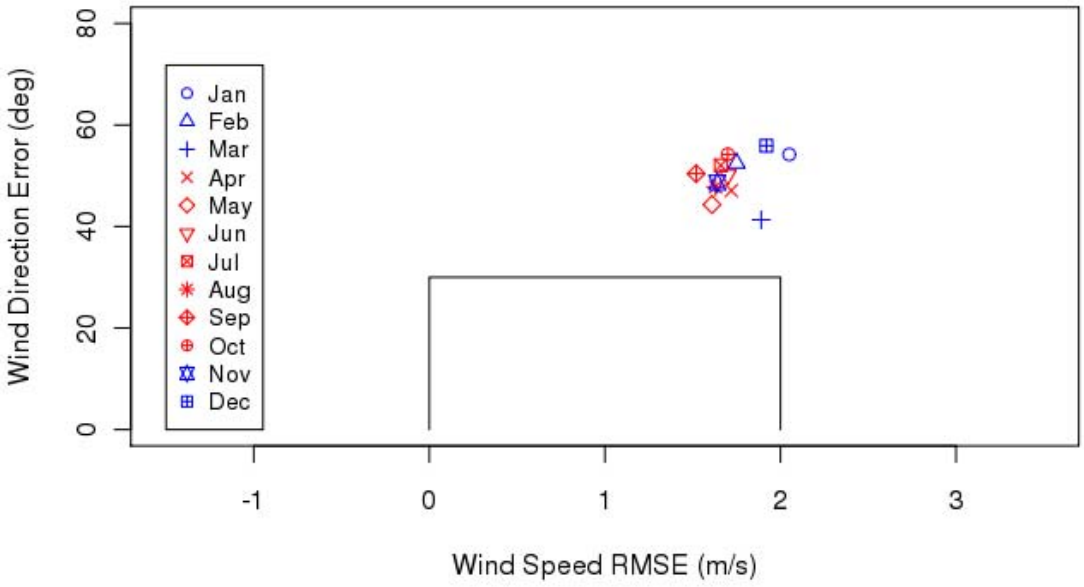
MT-KBTM 04km Wind Speed Performance Comparison

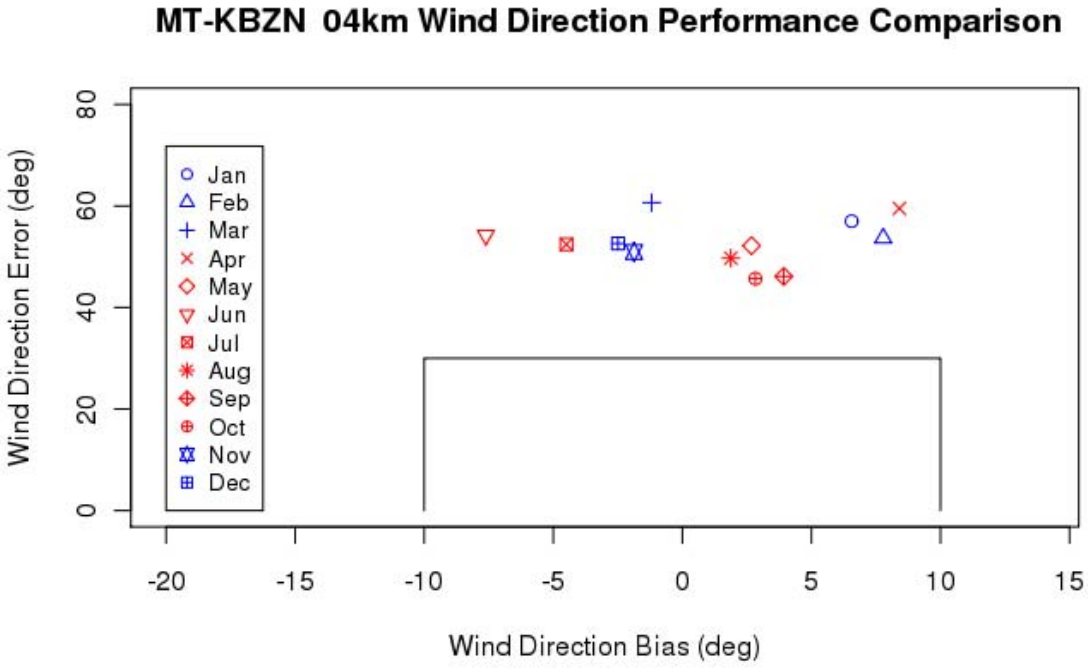


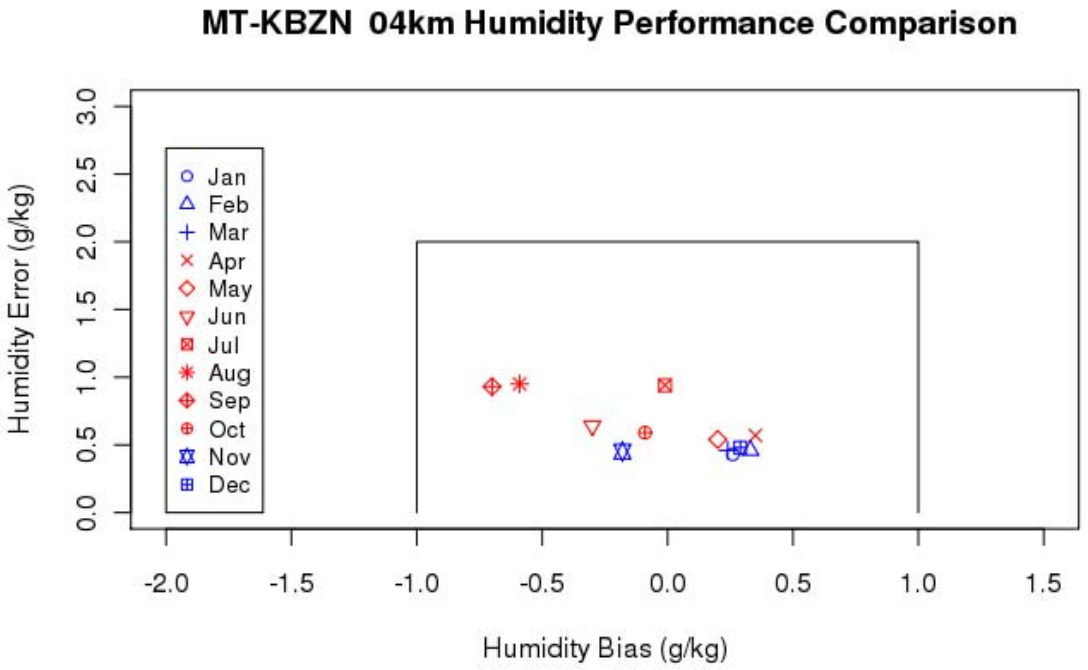
MT-KBTM 04km Temperature Performance Comparison



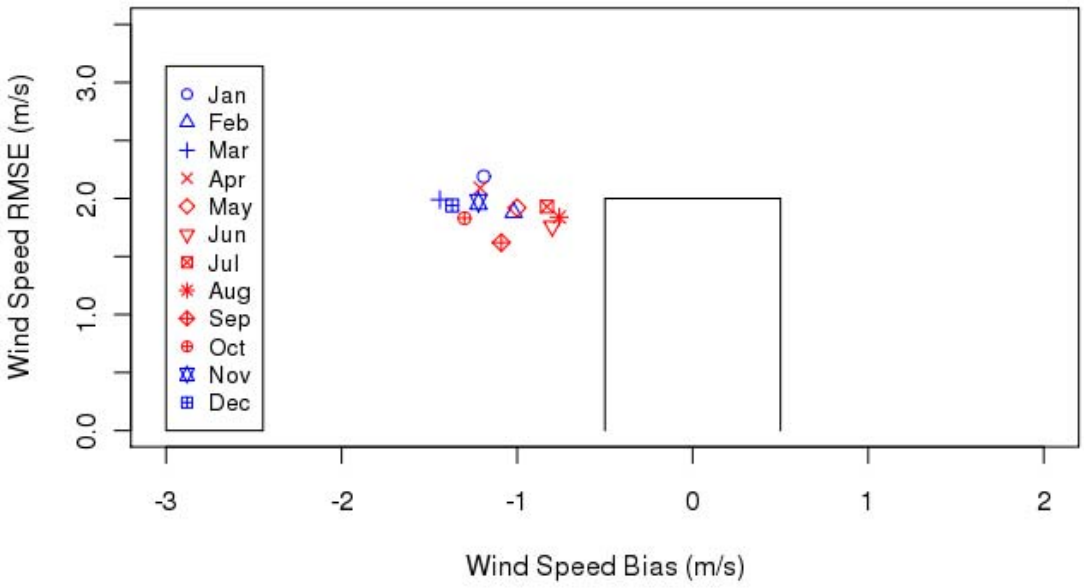
MT-KBTM 04km Wind Performance Comparison



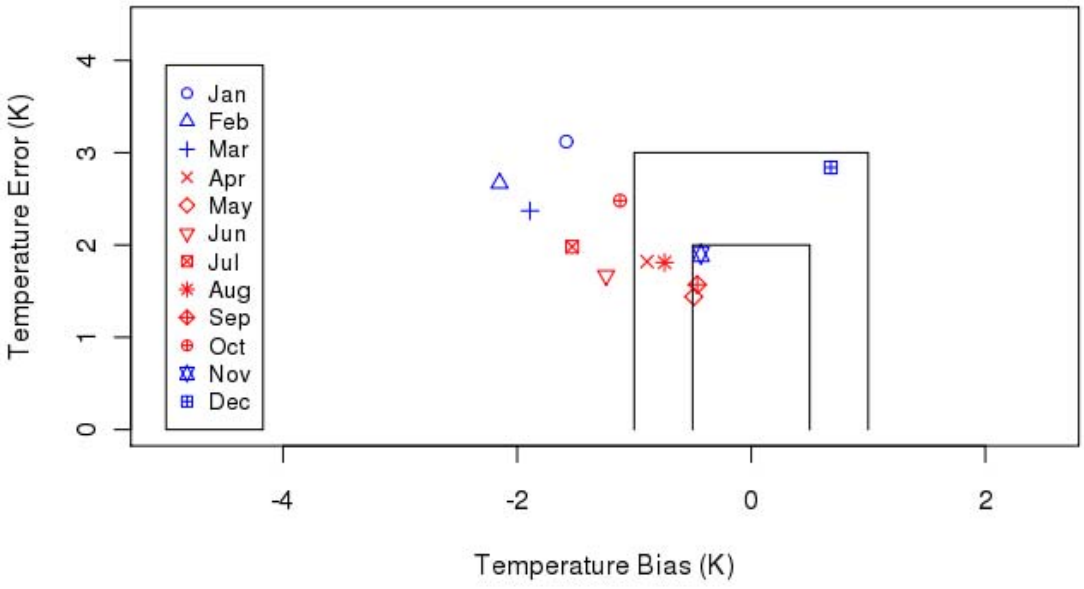

MT-KBZN 04km Wind Direction Performance Comparison
Wind Direction Error (deg)
0
20
40
60
80
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
-20
-15
-10
-5
0
5
10
15
Wind Direction Bias (deg)


MT-KBZN 04km Humidity Performance Comparison
Humidity Error (g/kg)
0.0
0.5
1.0
1.5
2.0
2.5
3.0
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
-2.0
-1.5
-1.0
-0.5
0.0
0.5
1.0
1.5
Humidity Bias (g/kg)

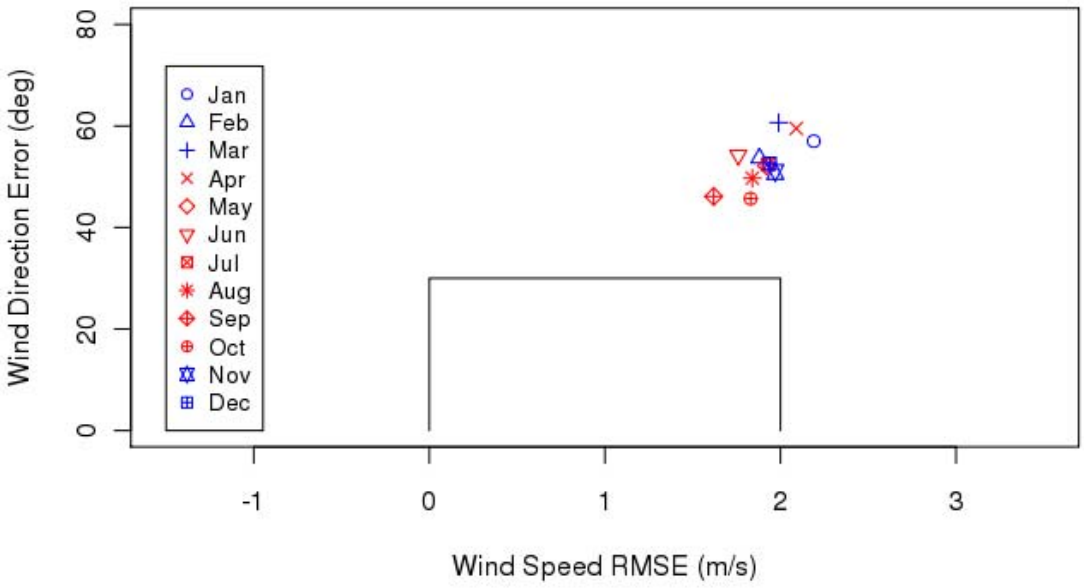
MT-KBZN 04km Wind Speed Performance Comparison



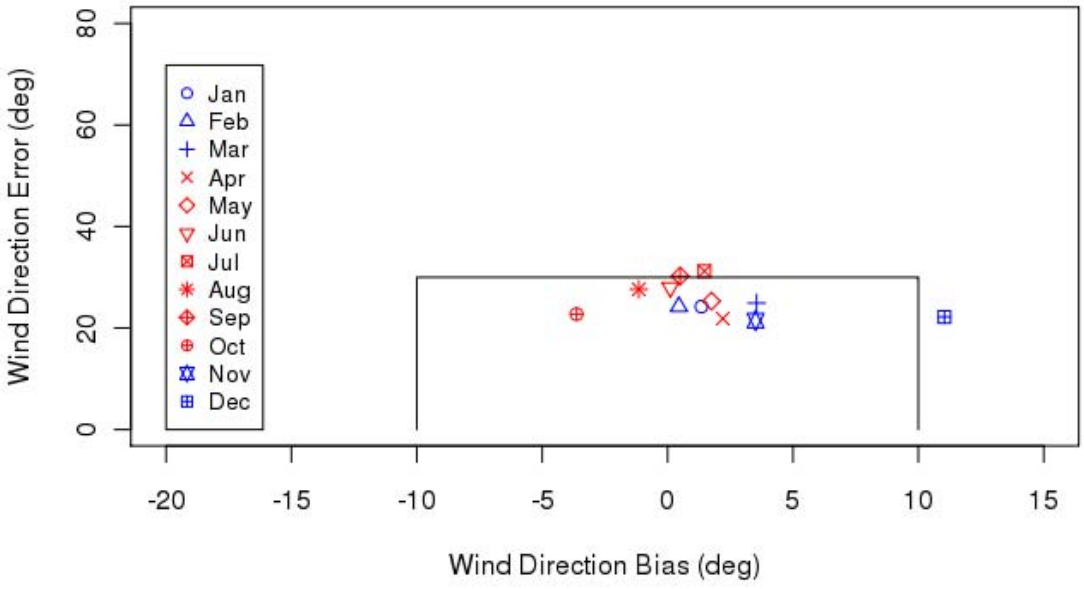
MT-KBZN 04km Temperature Performance Comparison



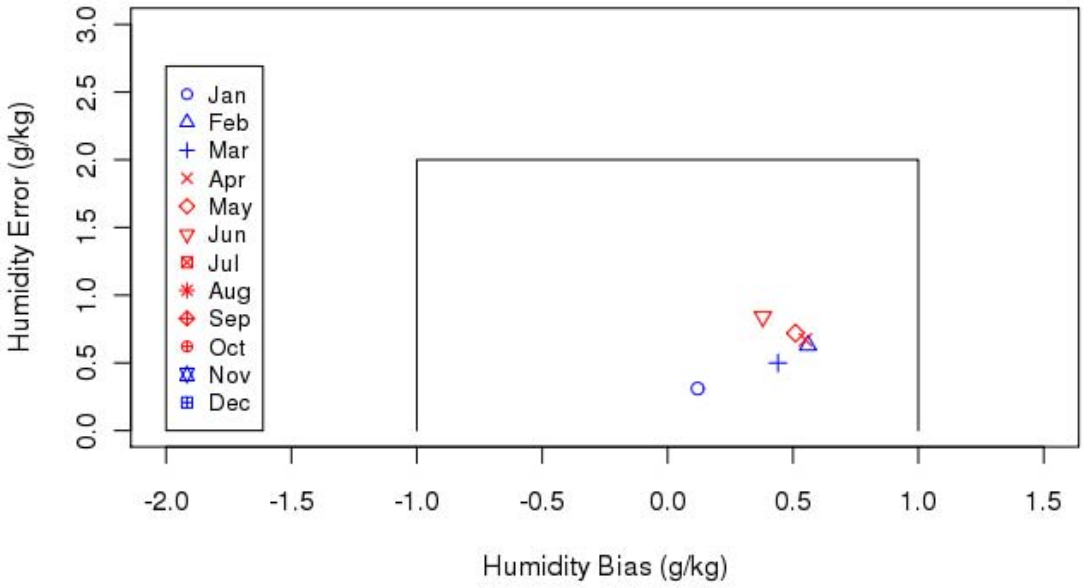
MT-KBZN 04km Wind Performance Comparison



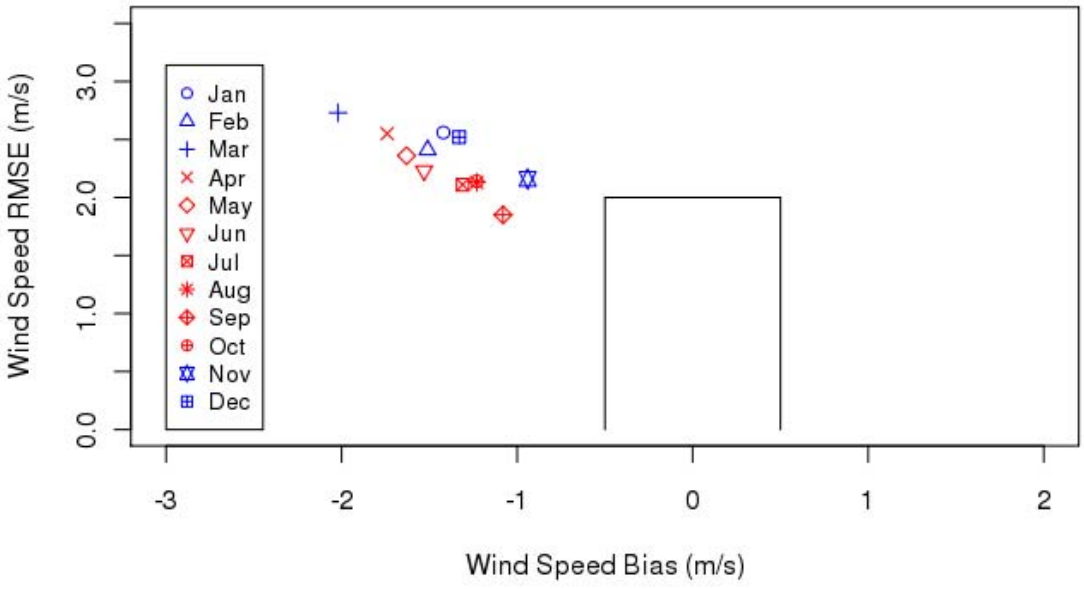
MT-KCTB 04km Wind Direction Performance Comparison



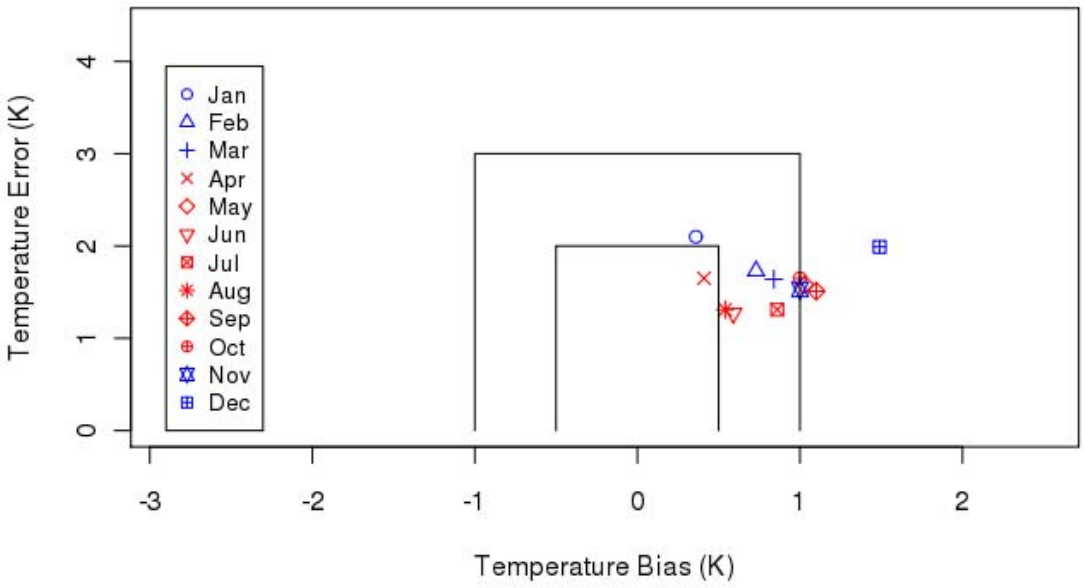
MT-KCTB 04km Humidity Performance Comparison



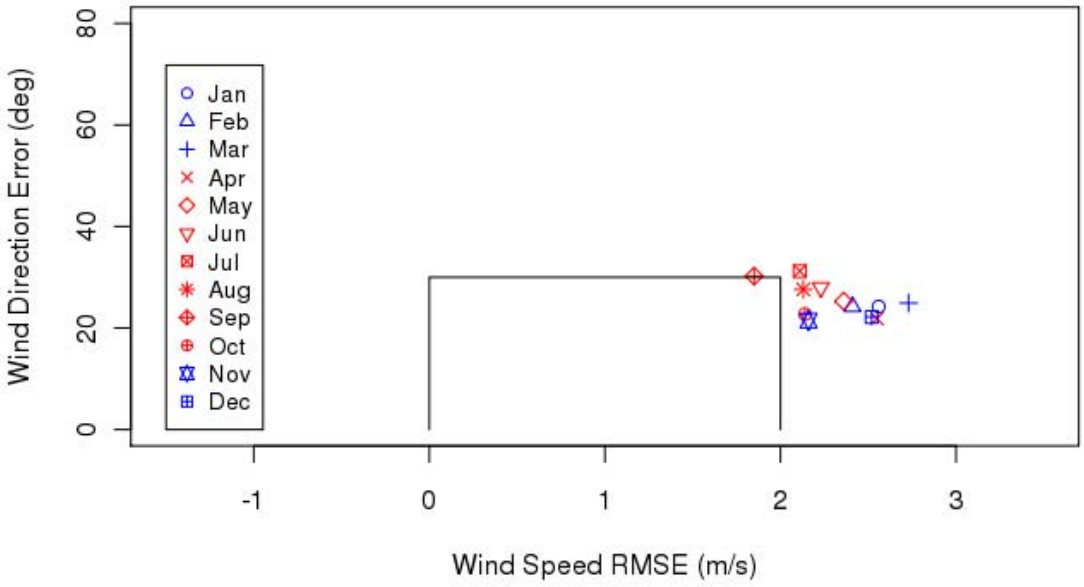
MT-KCTB 04km Wind Speed Performance Comparison



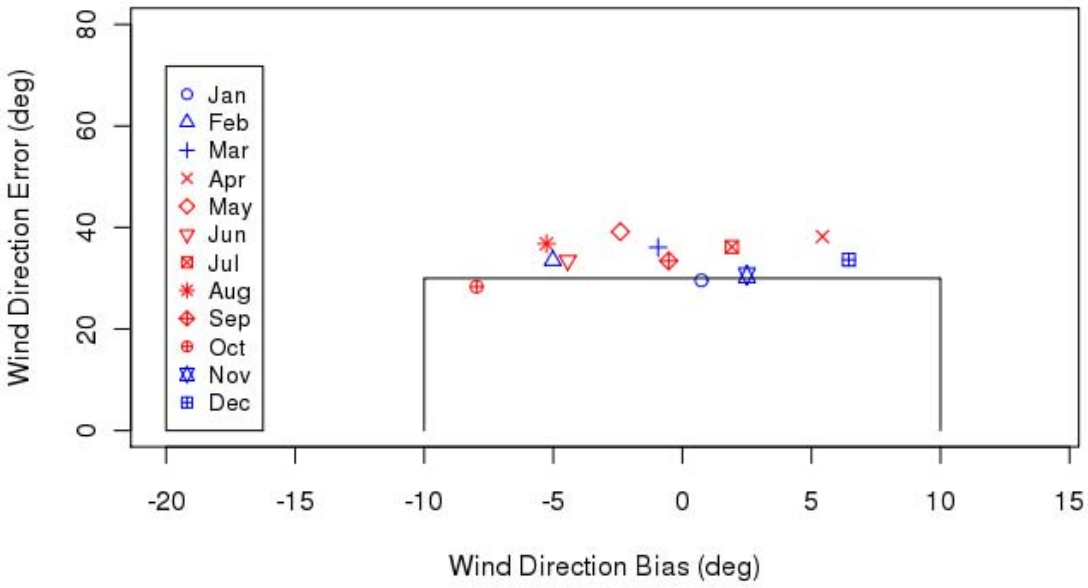
MT-KCTB 04km Temperature Performance Comparison



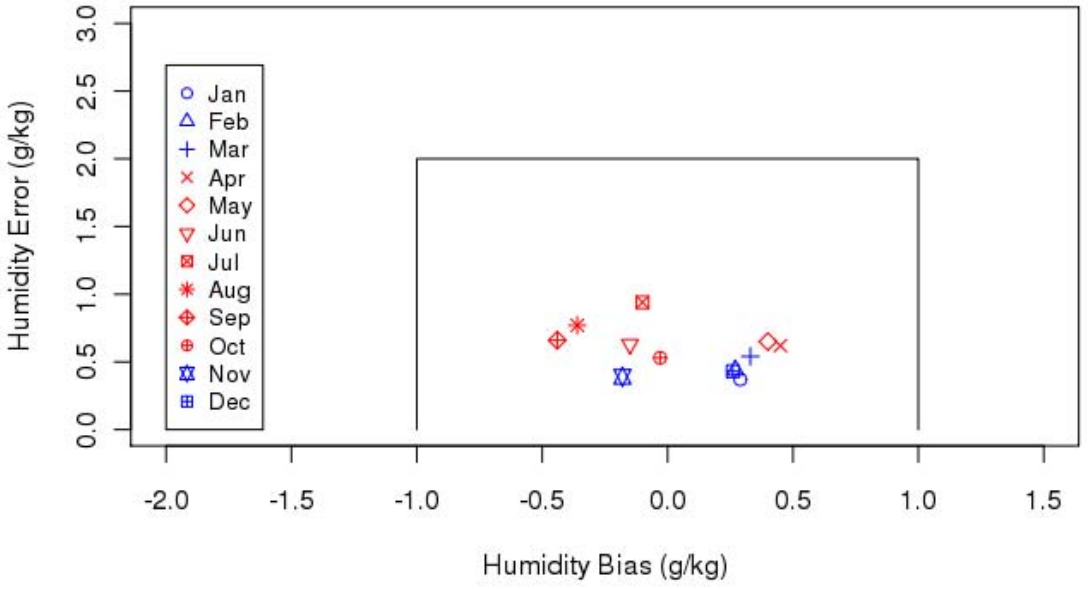
MT-KCTB 04km Wind Performance Comparison



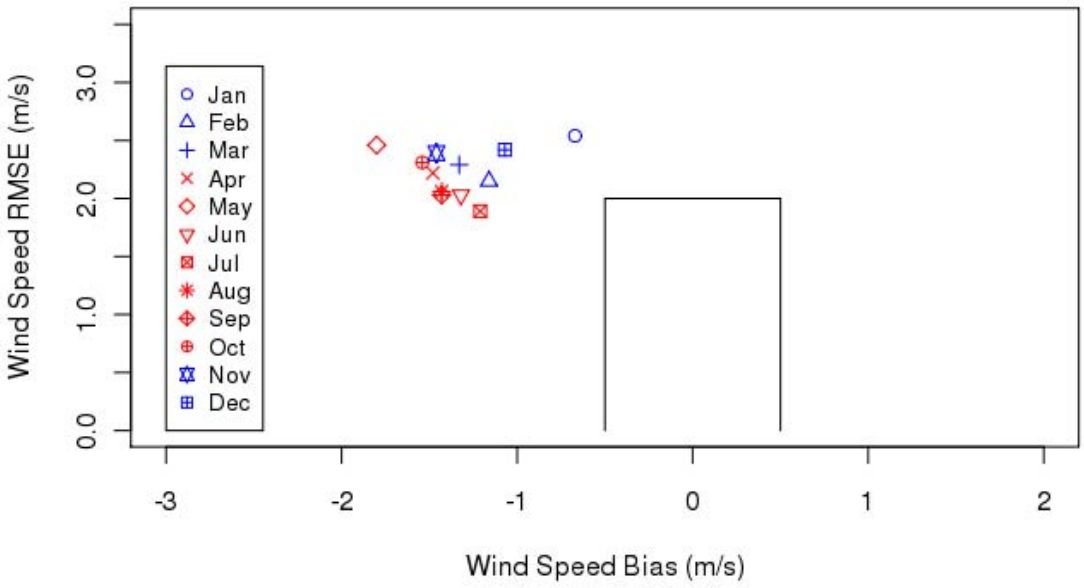
MT-KDLN 04km Wind Direction Performance Comparison



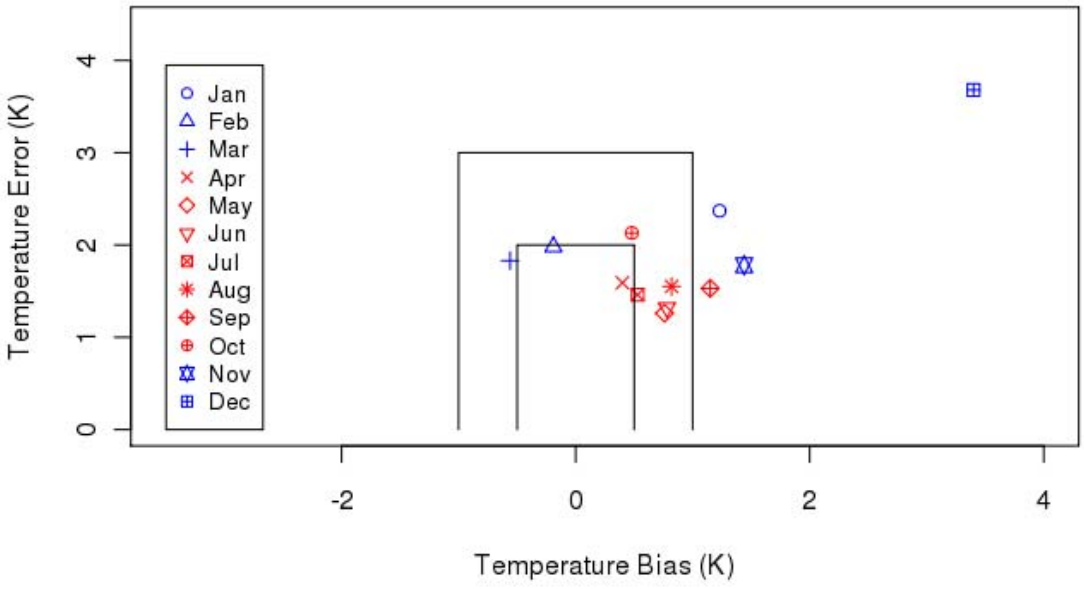
MT-KDLN 04km Humidity Performance Comparison



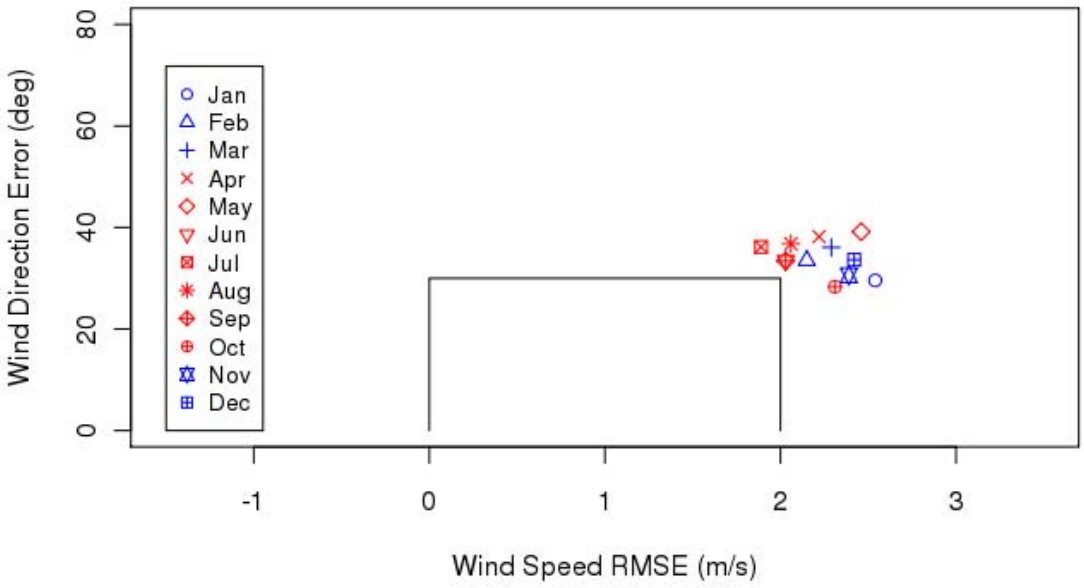
MT-KDLN 04km Wind Speed Performance Comparison



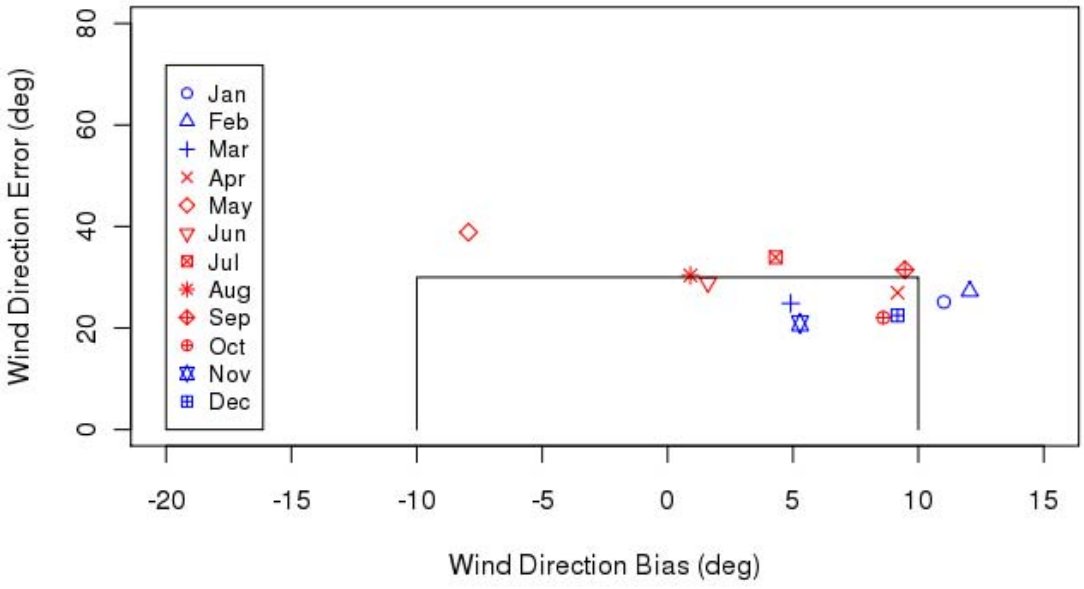
MT-KDLN 04km Temperature Performance Comparison



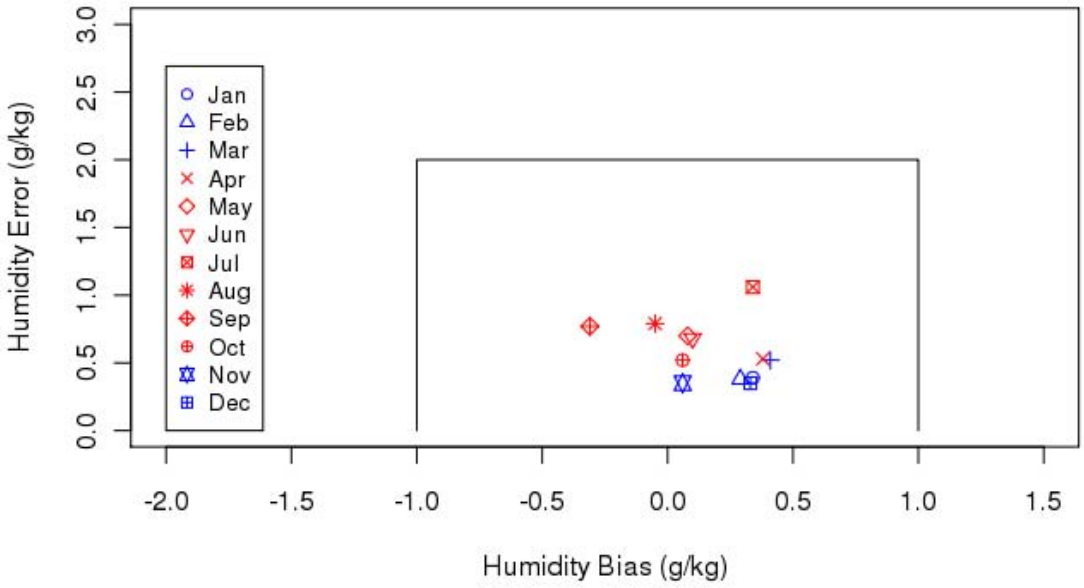
MT-KDLN 04km Wind Performance Comparison



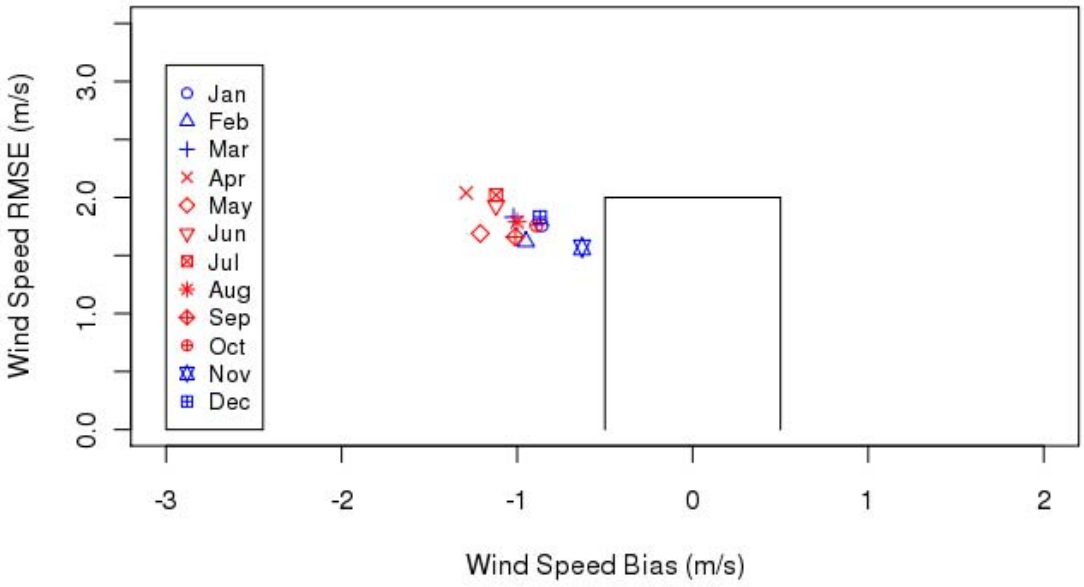
MT-KGDV 04km Wind Direction Performance Comparison

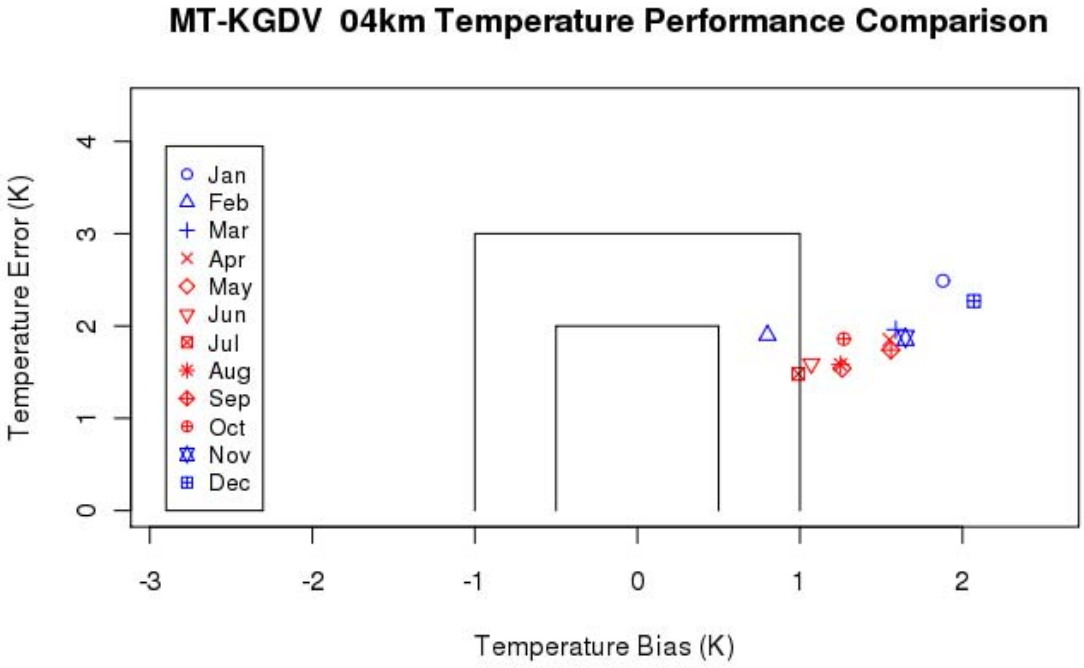


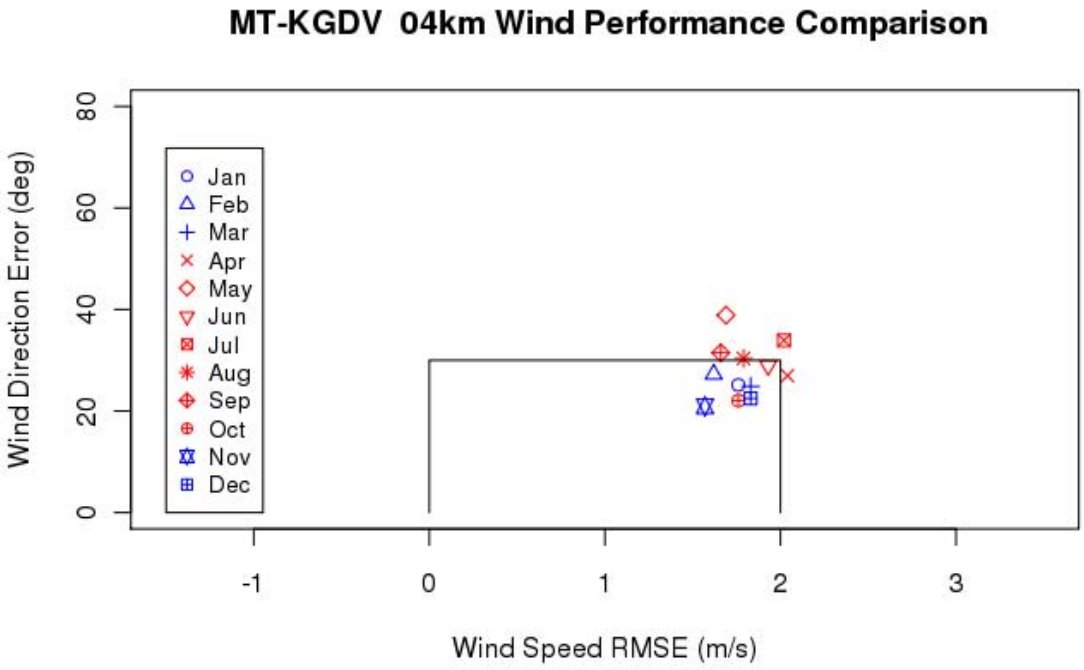
MT-KGDV 04km Humidity Performance Comparison



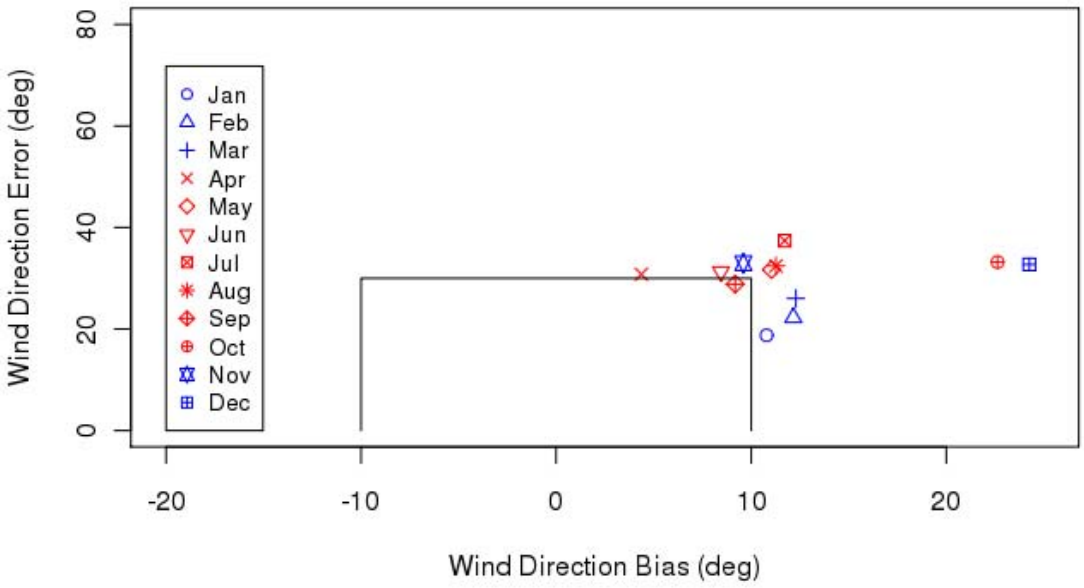
MT-KGDV 04km Wind Speed Performance Comparison



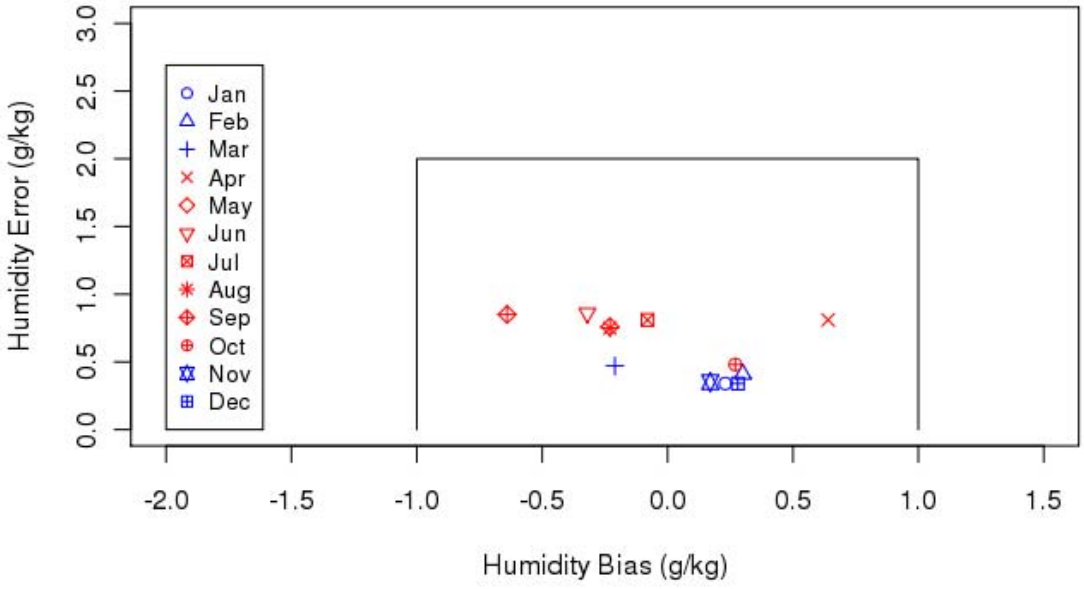

MT-KGDV 04km Temperature Performance Comparison
Temperature Error (K)
Temperature Bias (K)
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
0
1
2
3
4
-3
-2
-1
0
1
2


MT-KGDV 04km Wind Performance Comparison
Wind Direction Error (deg)
Wind Speed RMSE (m/s)
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
0
20
40
60
80
-1
0
1
2
3

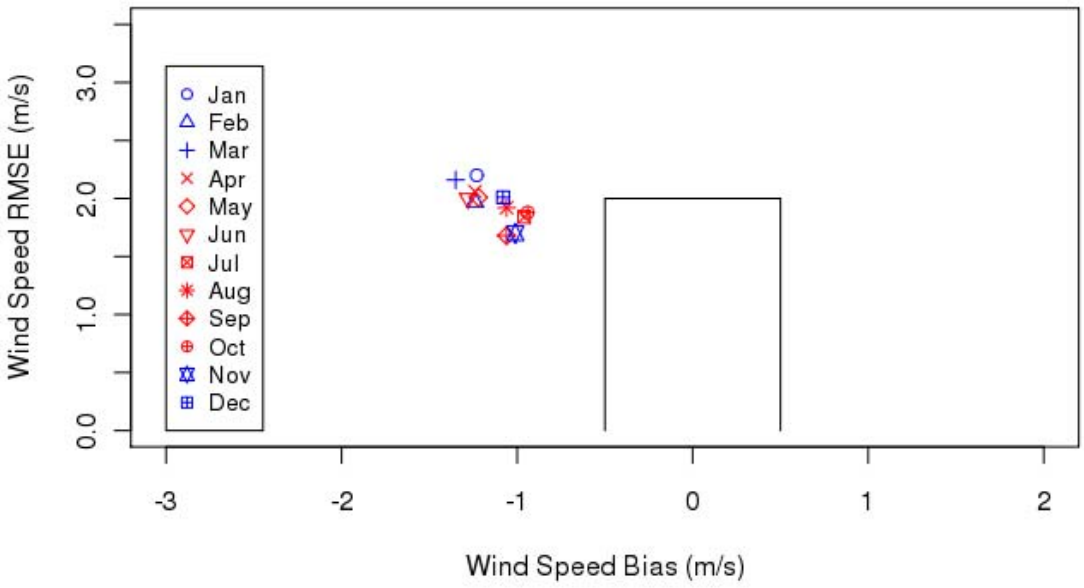
MT-KGFA 04km Wind Direction Performance Comparison



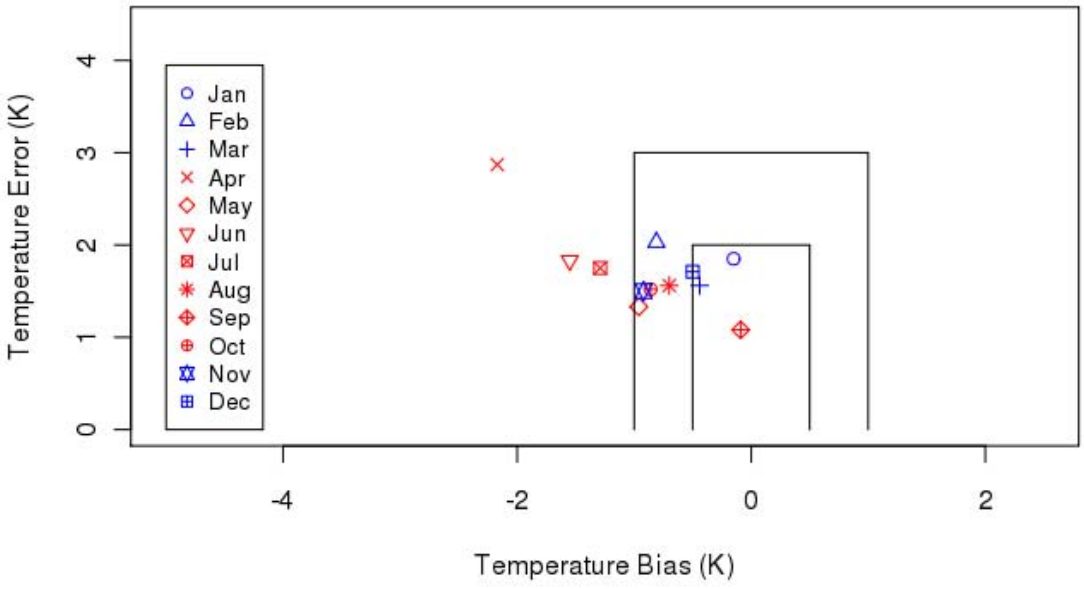
MT-KGFA 04km Humidity Performance Comparison



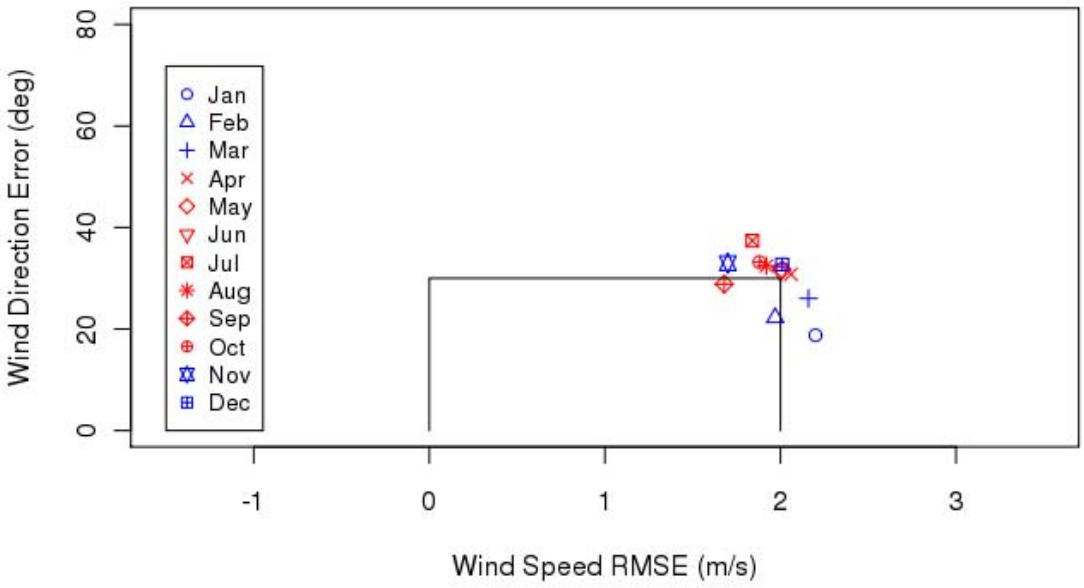
MT-KGFA 04km Wind Speed Performance Comparison



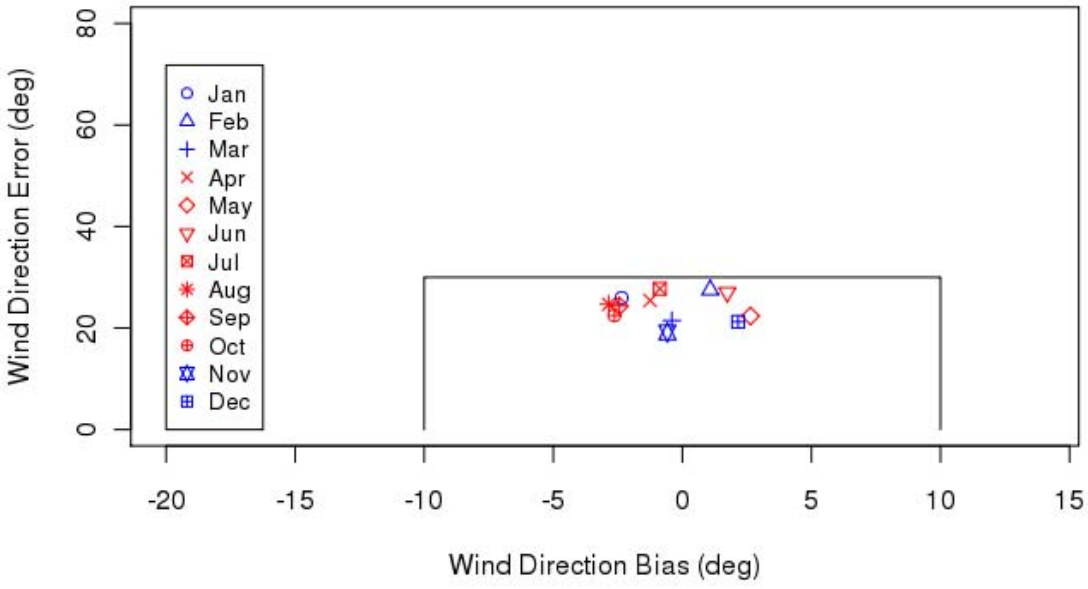
MT-KGFA 04km Temperature Performance Comparison



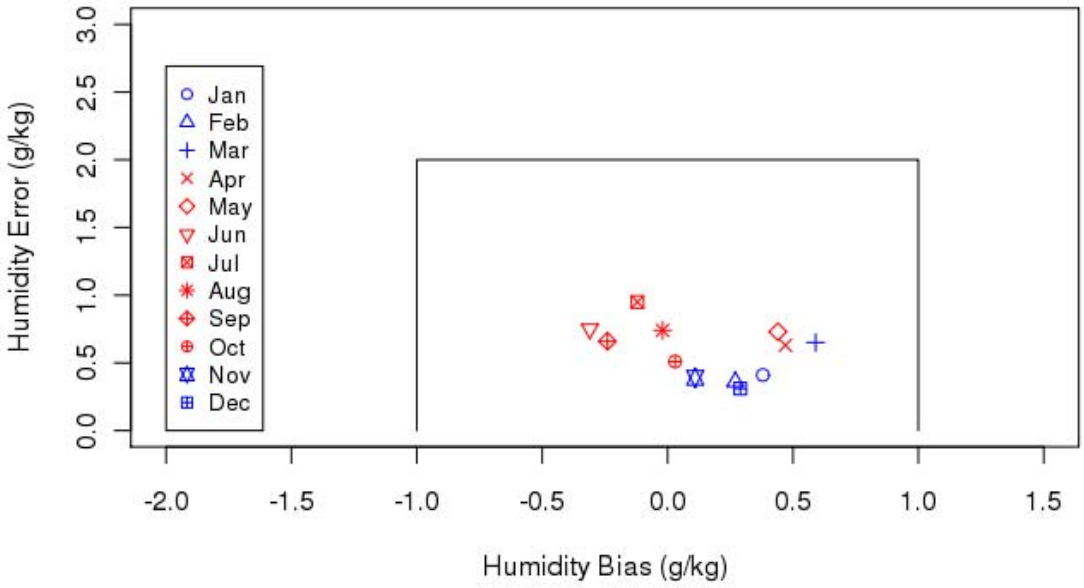
MT-KGFA 04km Wind Performance Comparison



MT-KGGW 04km Wind Direction Performance Comparison



MT-KGGW 04km Humidity Performance Comparison



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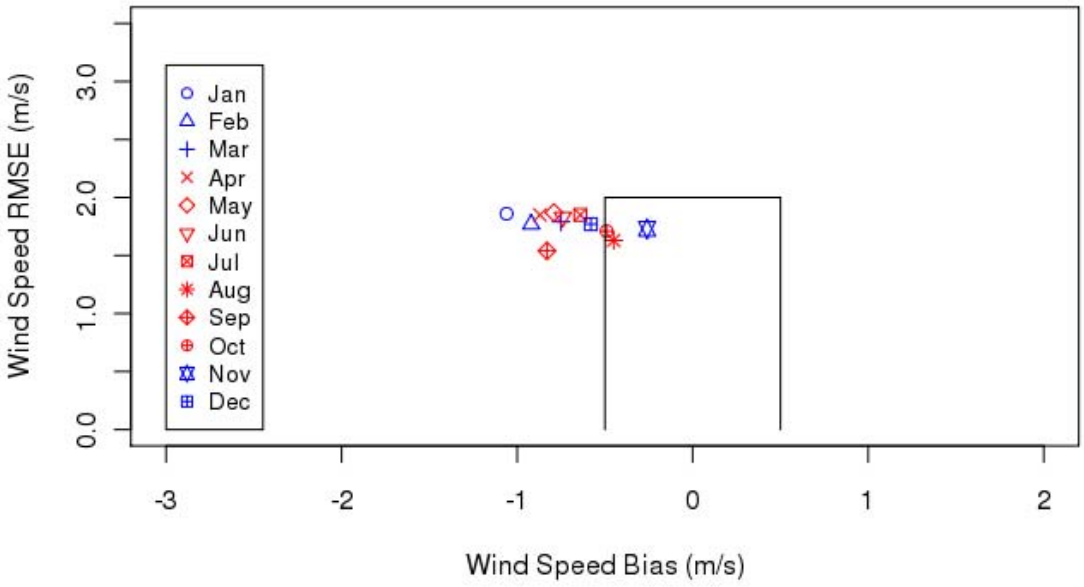
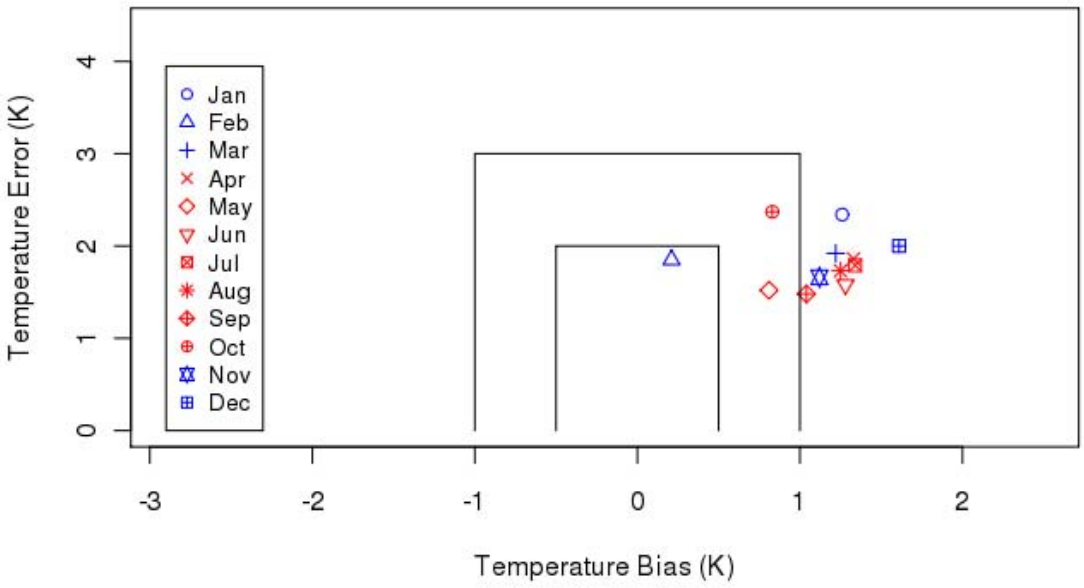


MT-KGGW 04km Temperature Performance Comparison



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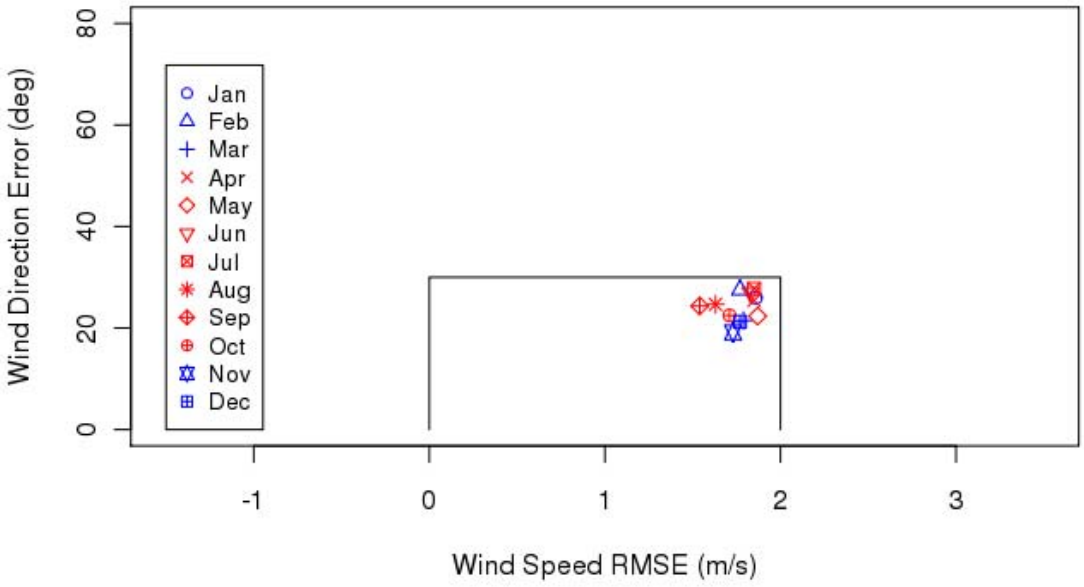
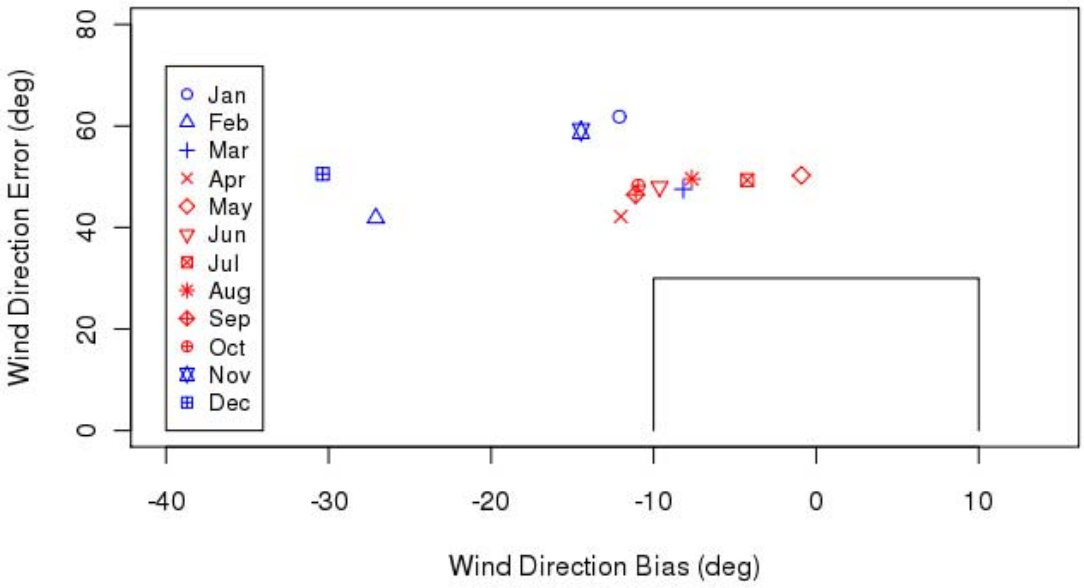
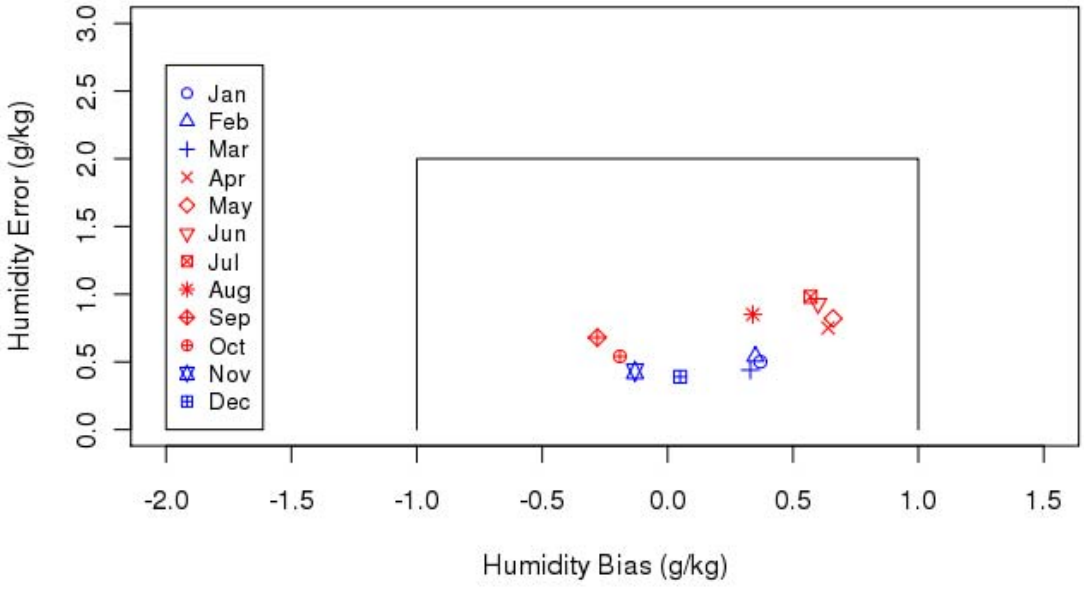


MT-KGPI 04km Wind Direction Performance Comparison



MT-KGPI 04km Humidity Performance Comparison



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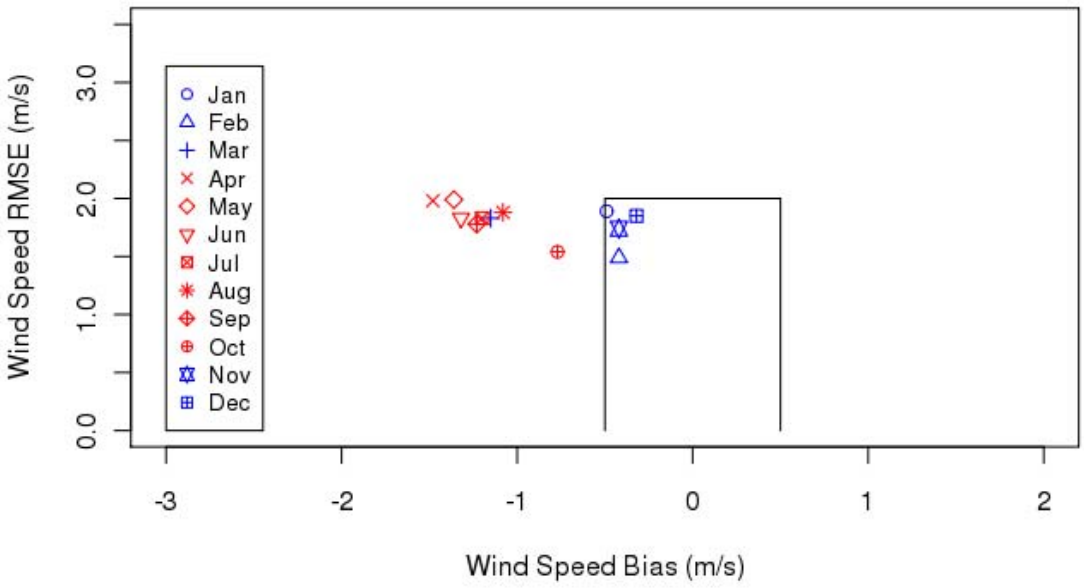

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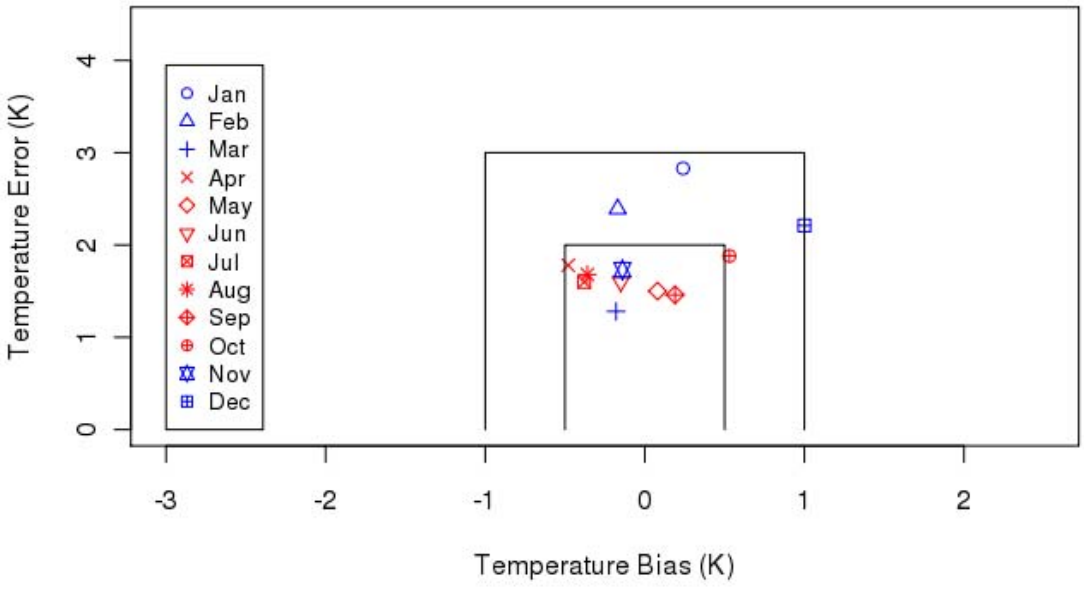

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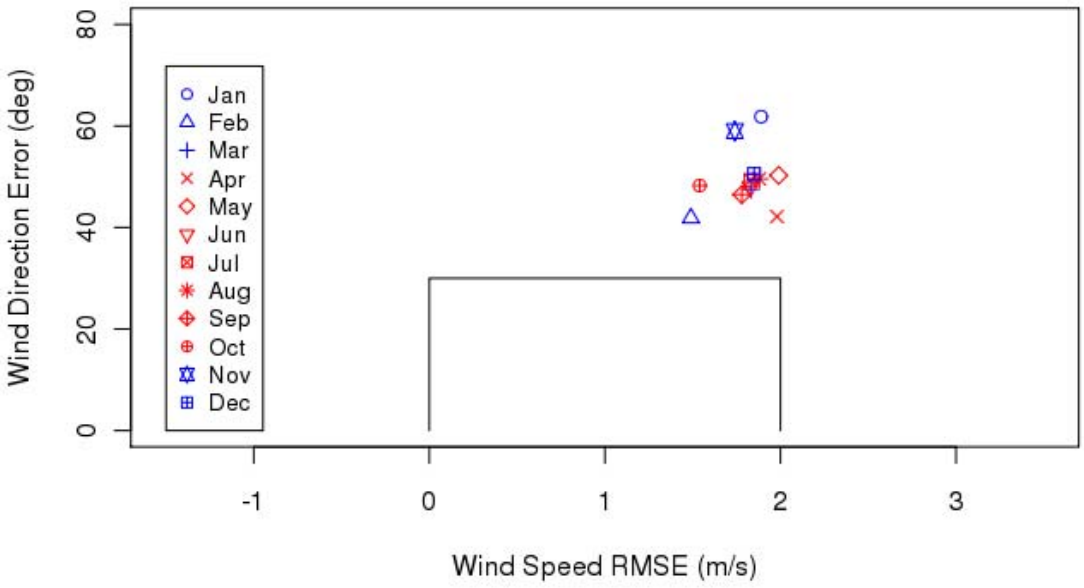
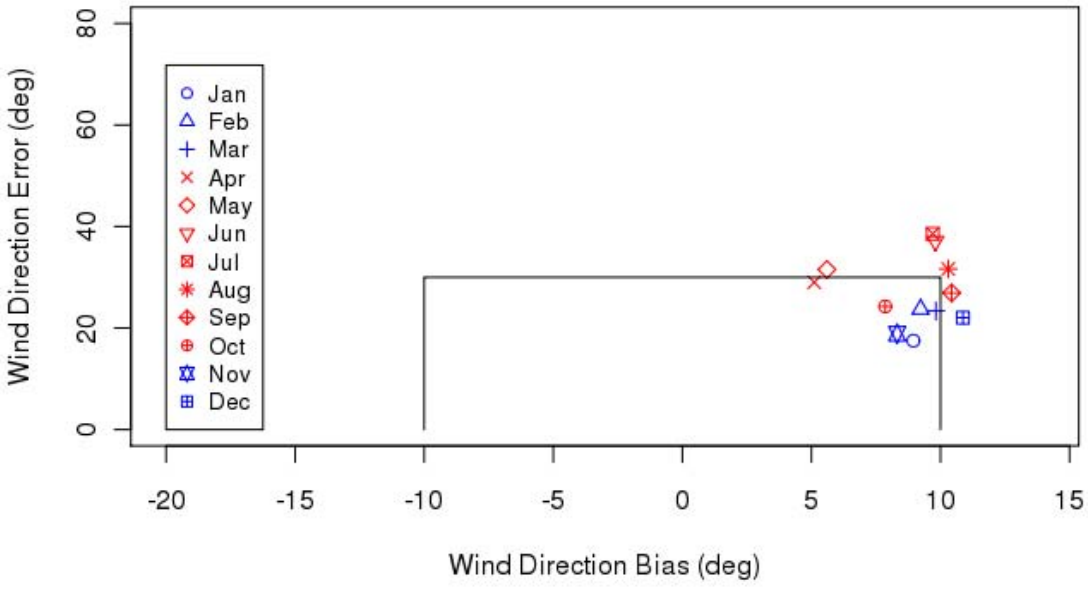
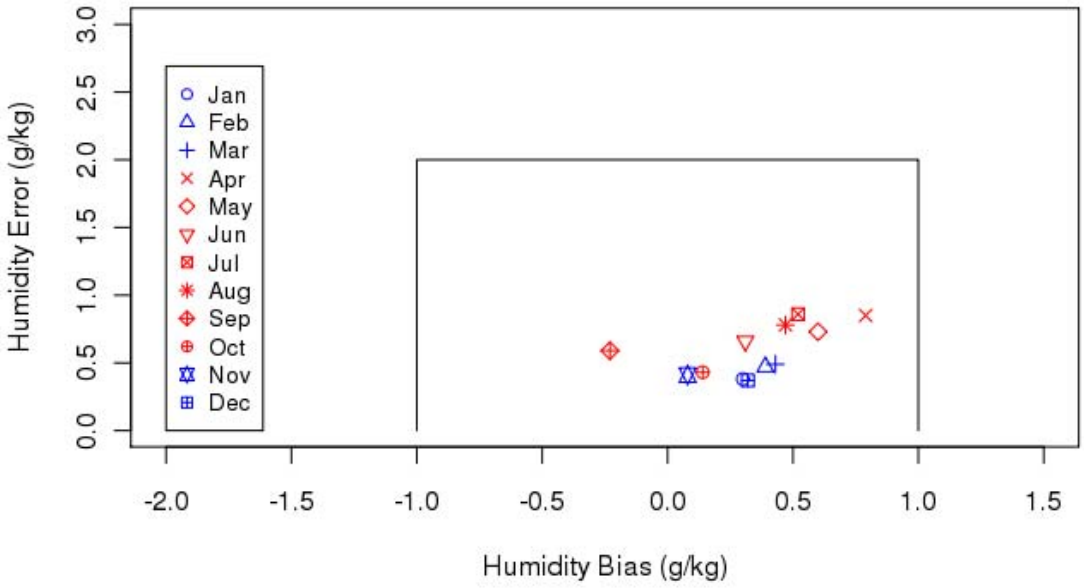


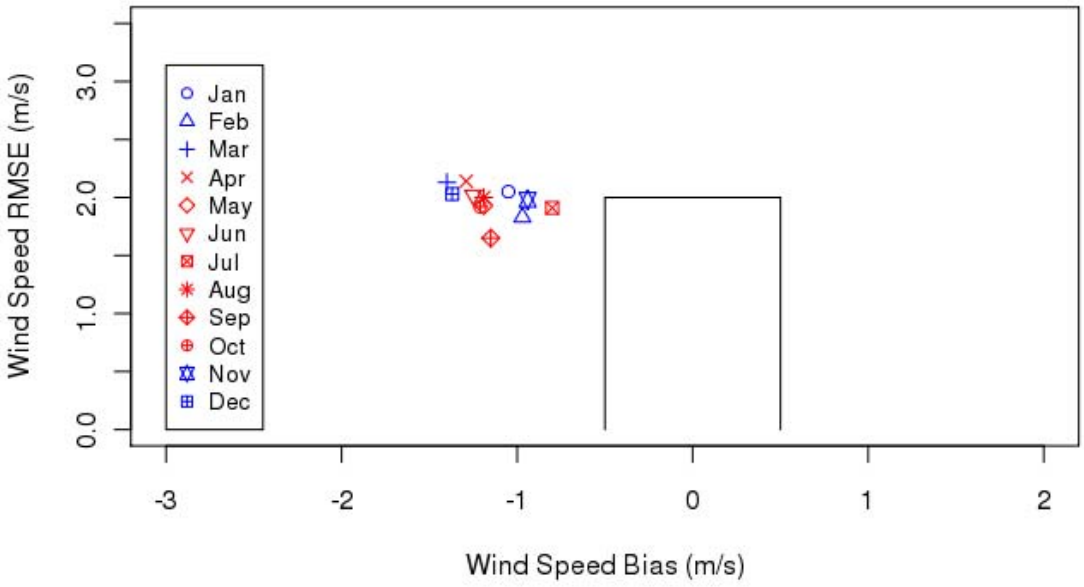
MT-KGTF 04km Wind Direction Performance Comparison



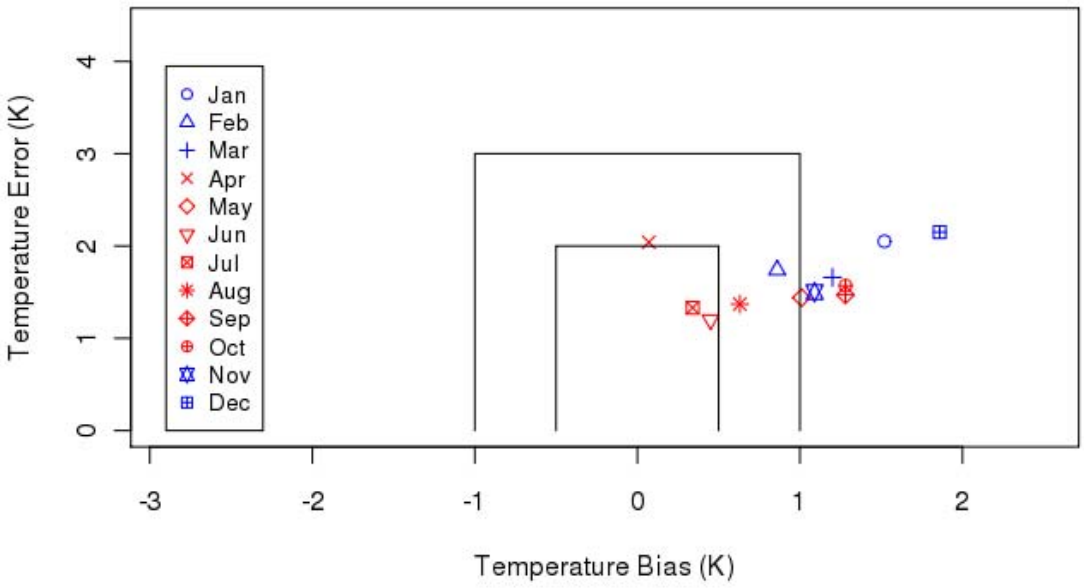
MT-KGTF 04km Humidity Performance Comparison



MT-KGTF 04km Wind Speed Performance Comparison



MT-KGTF 04km Temperature Performance Comparison



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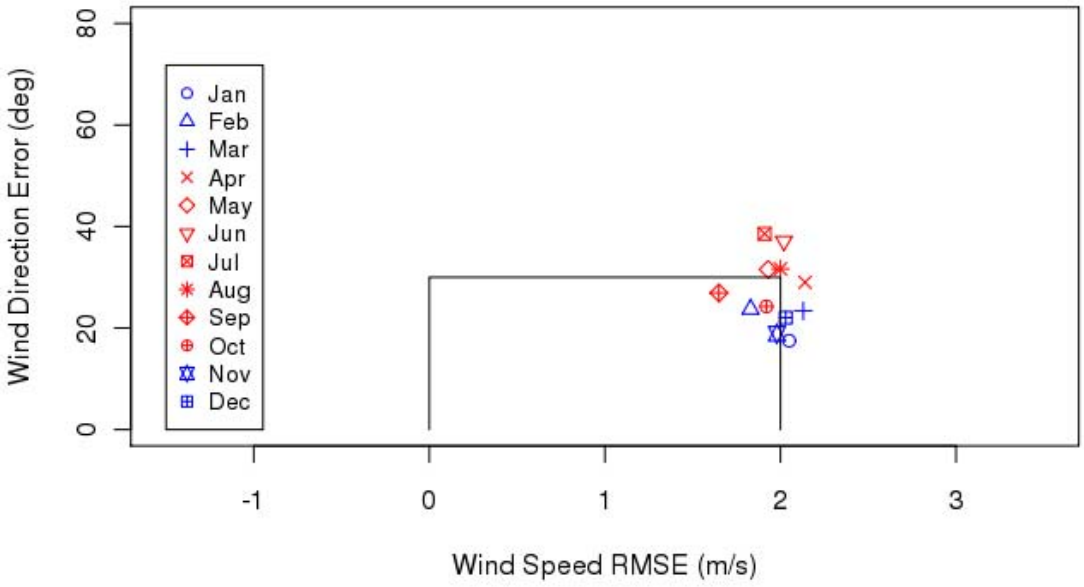
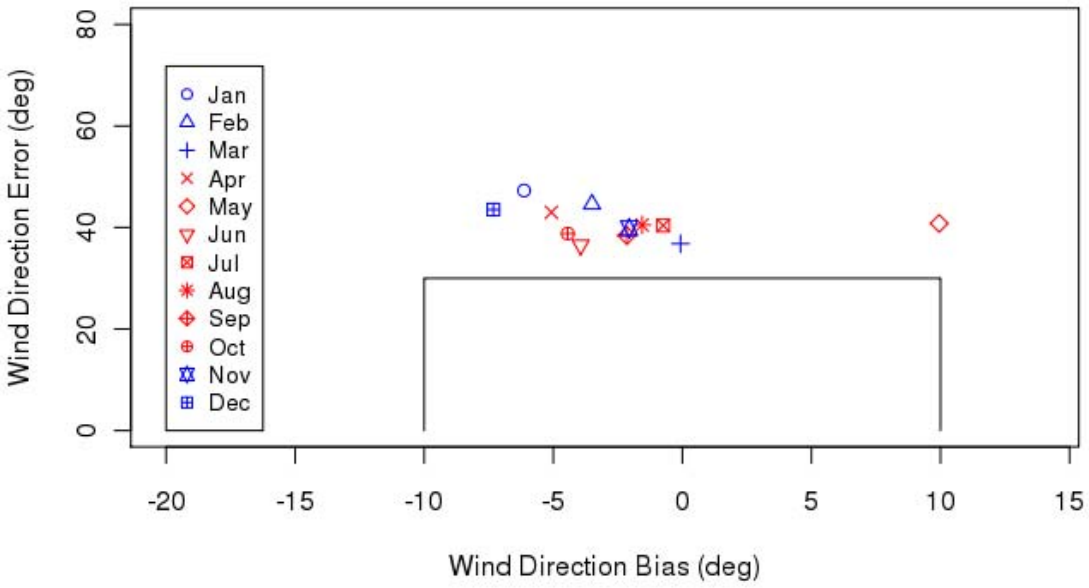
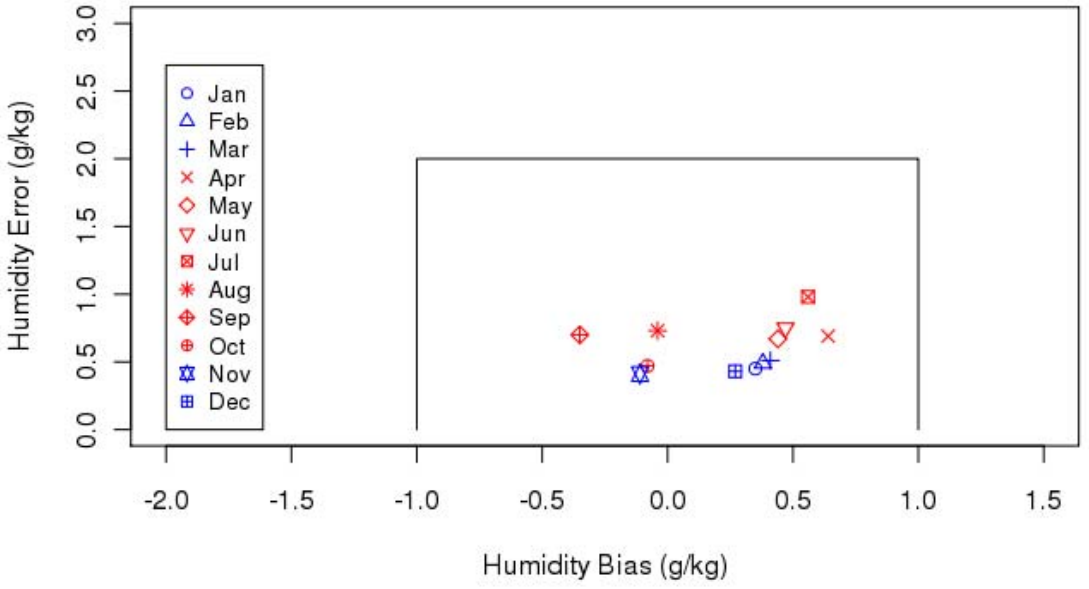


MT-KHLN 04km Wind Direction Performance Comparison



MT-KHLN 04km Humidity Performance Comparison



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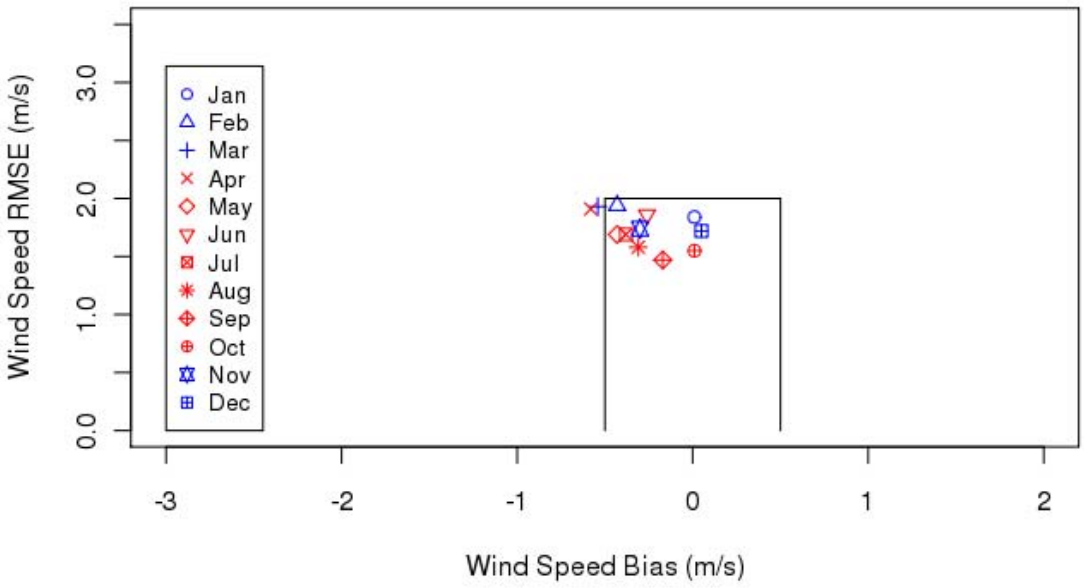
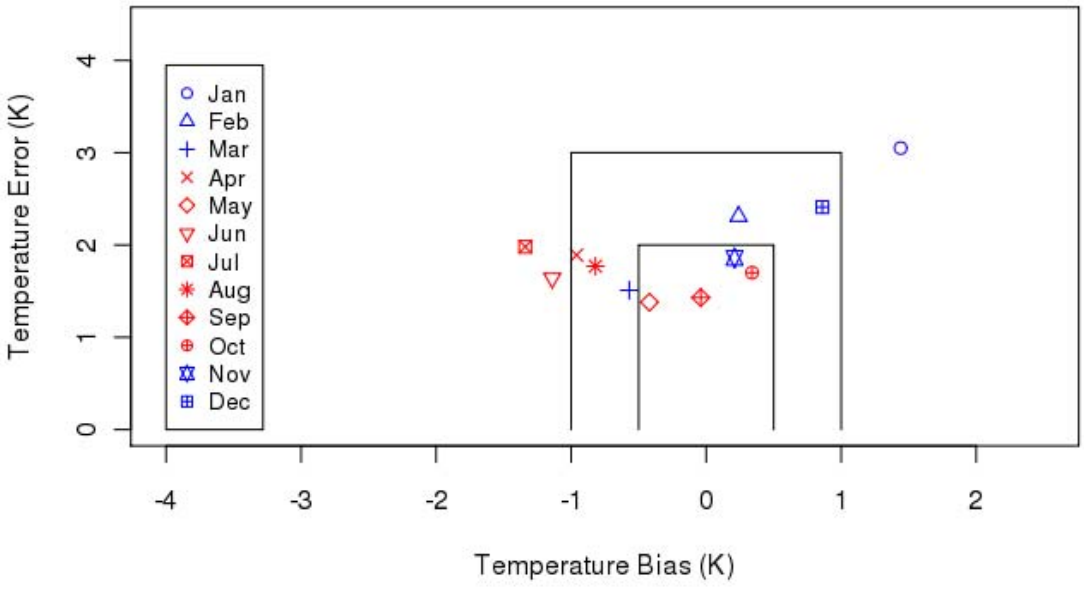


MT-KHLN 04km Temperature Performance Comparison



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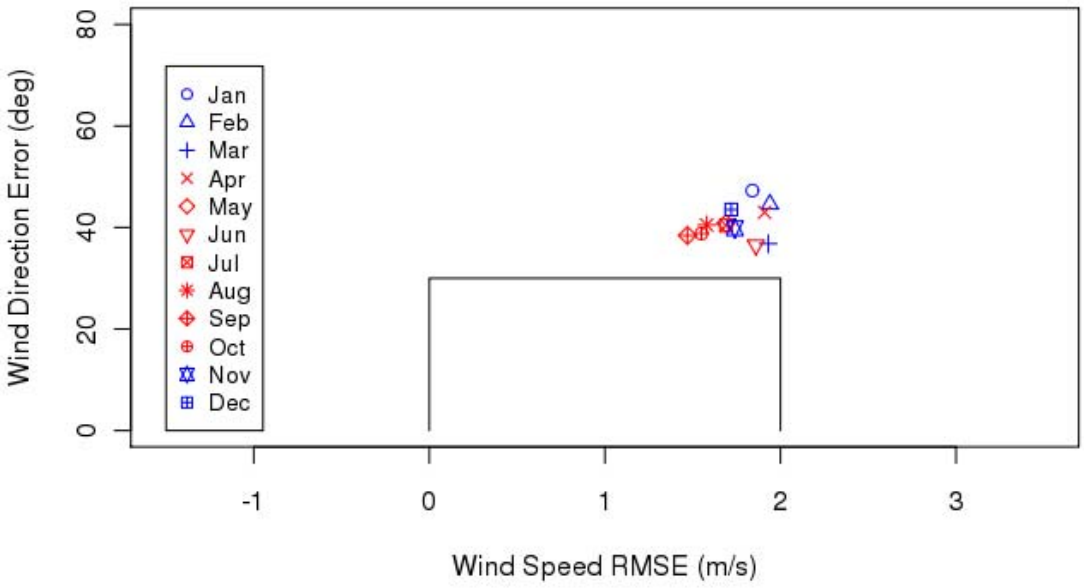
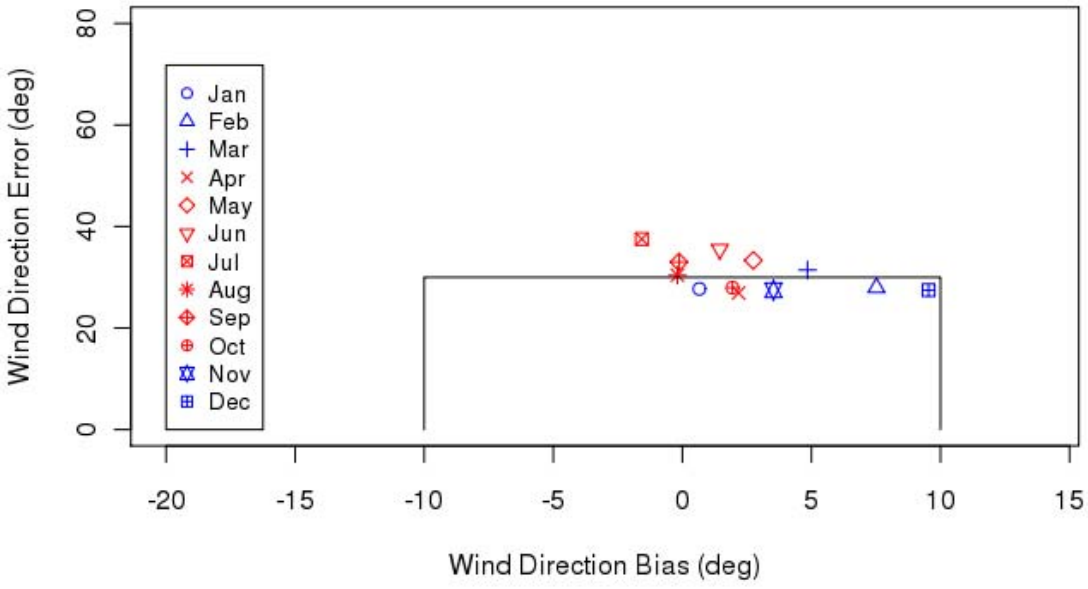
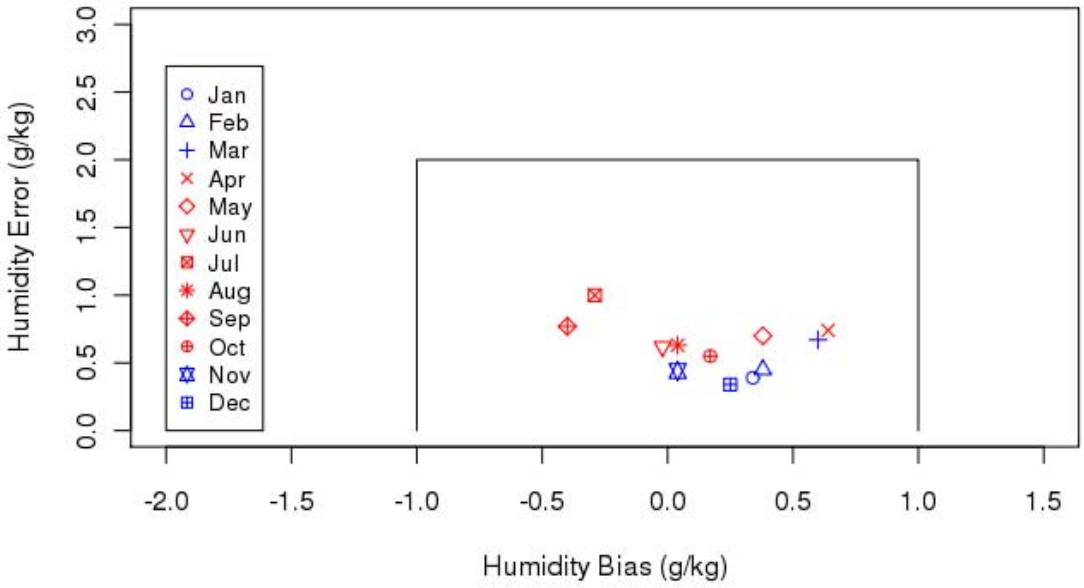


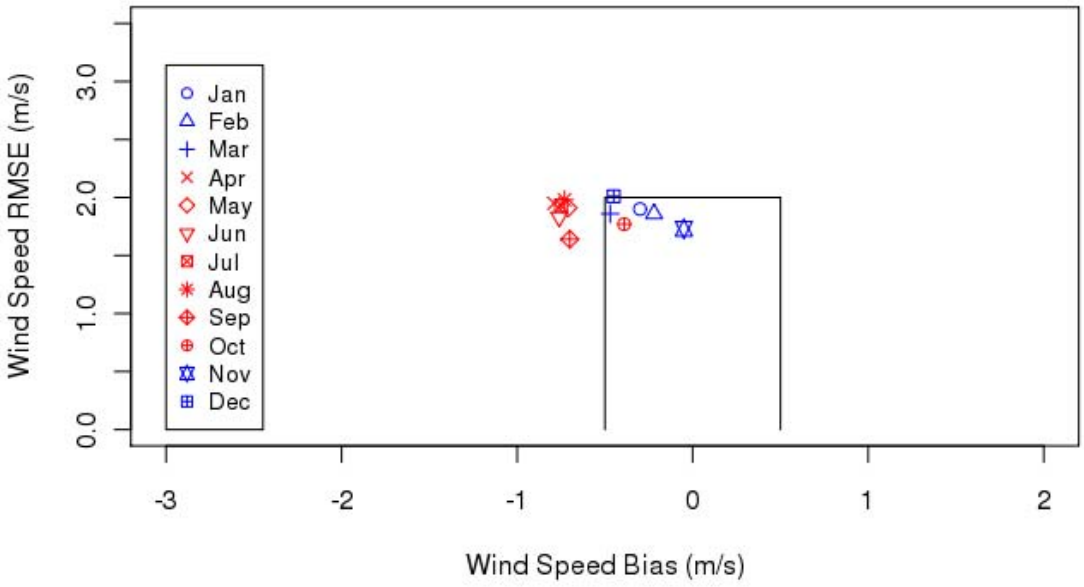
MT-KHVR 04km Wind Direction Performance Comparison



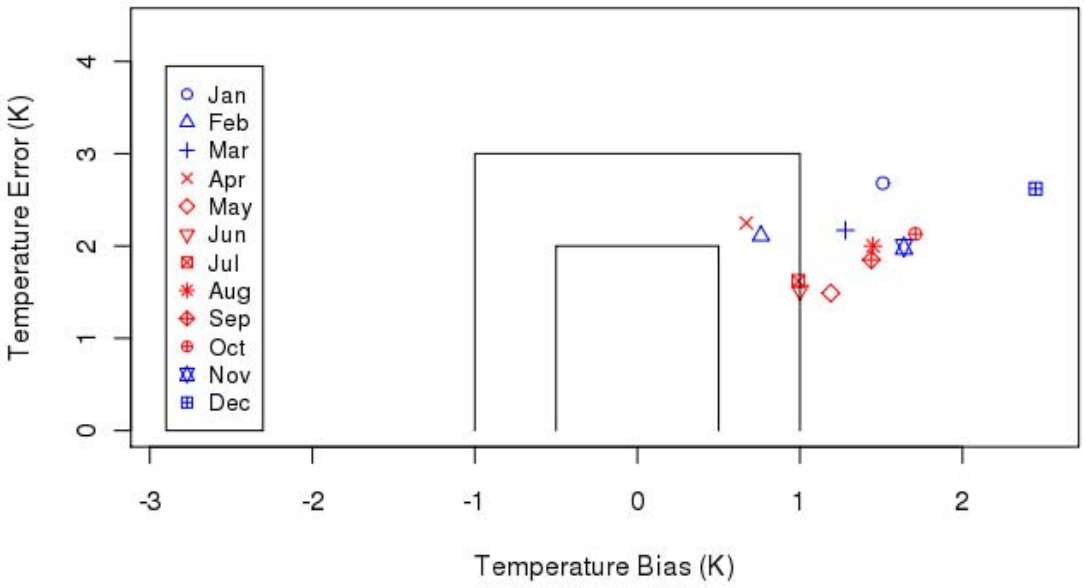
MT-KHVR 04km Humidity Performance Comparison



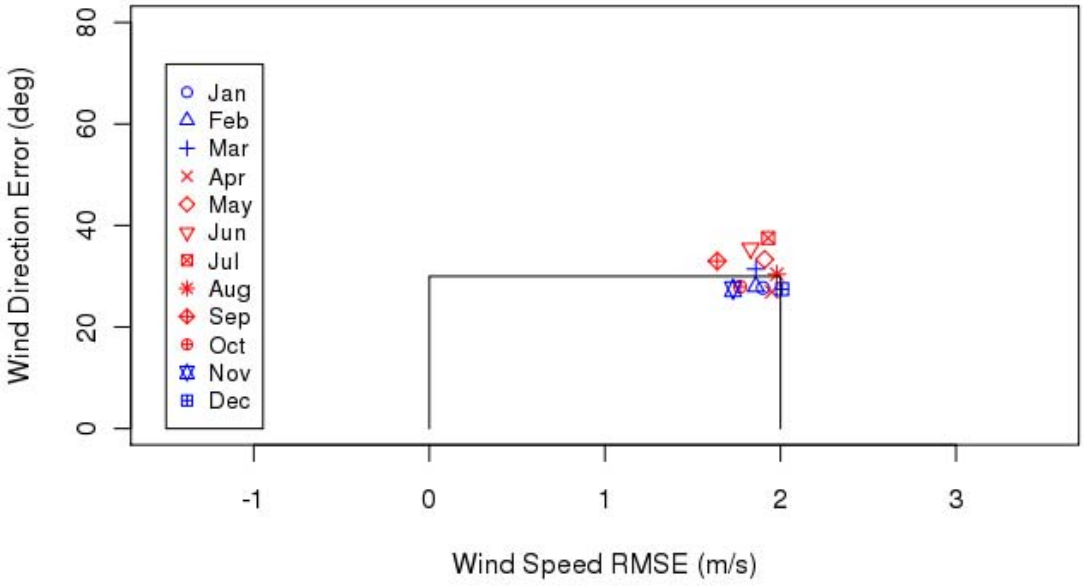
MT-KHVR 04km Wind Speed Performance Comparison



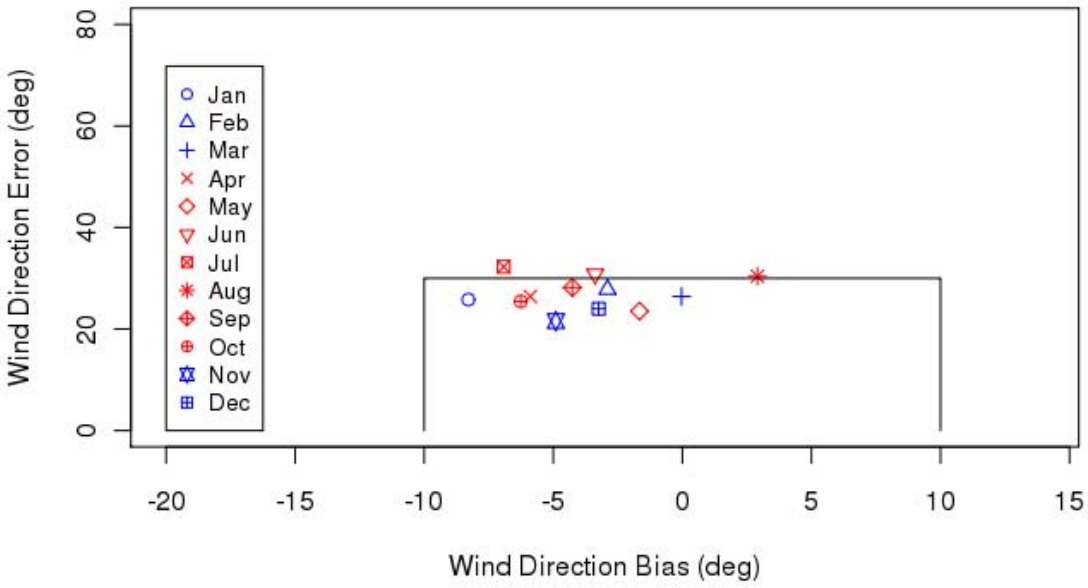
MT-KHVR 04km Temperature Performance Comparison



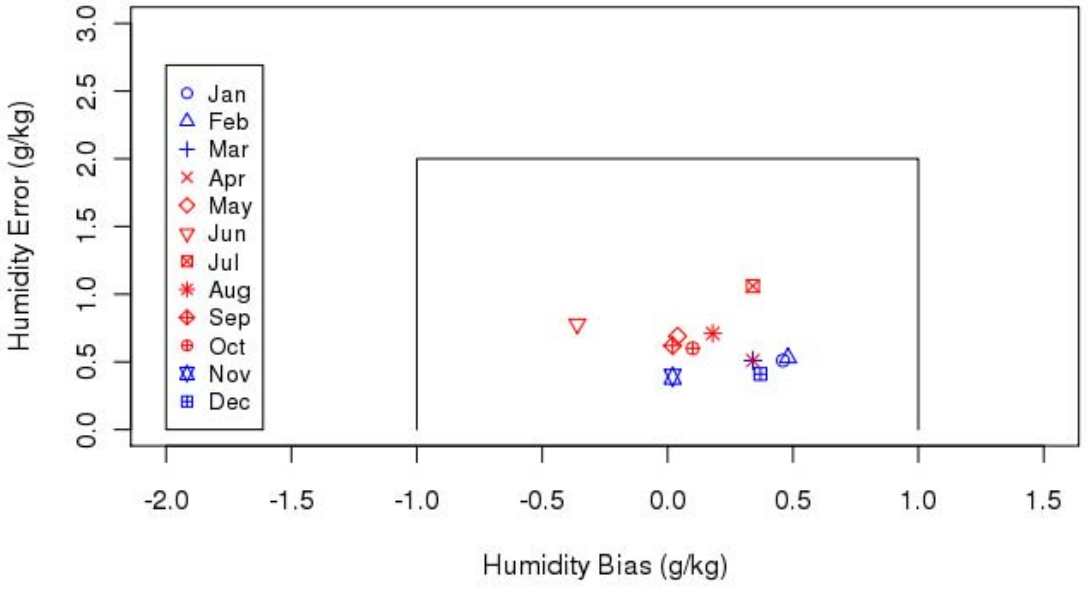
MT-KHVR 04km Wind Performance Comparison



MT-KJDN 04km Wind Direction Performance Comparison



MT-KJDN 04km Humidity Performance Comparison



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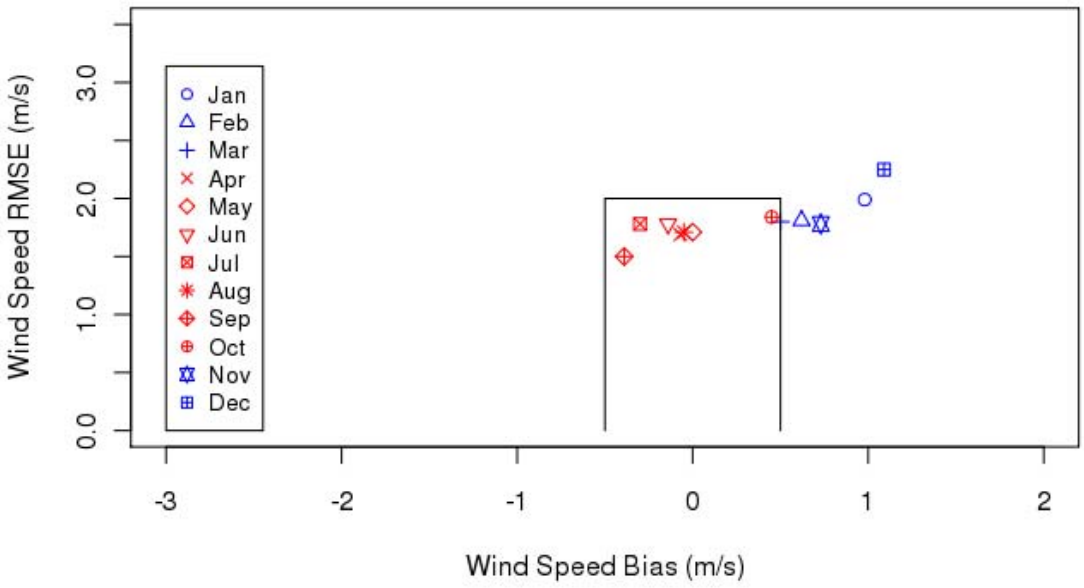
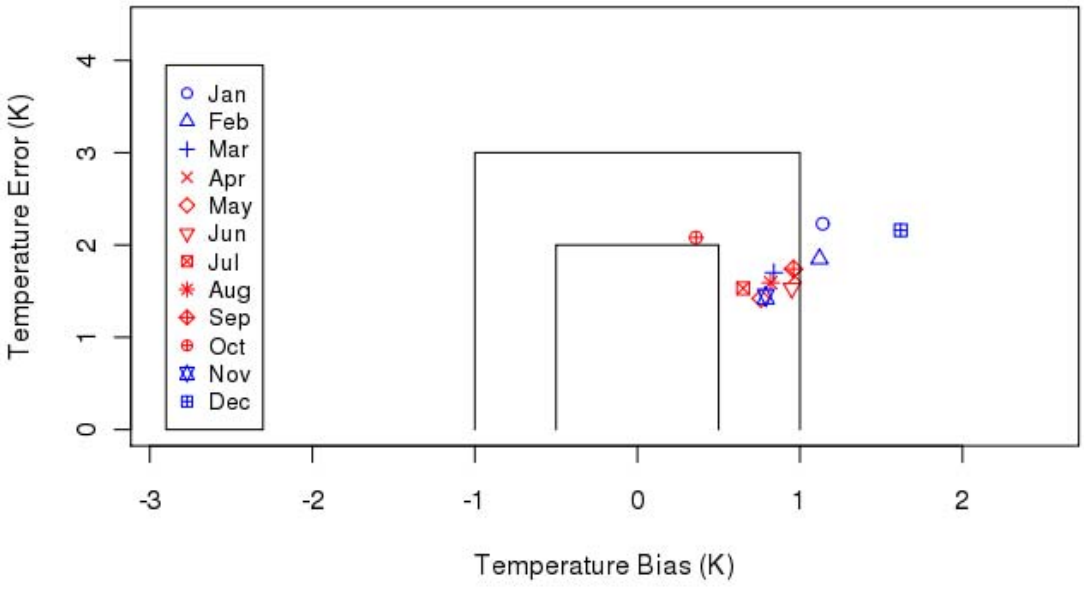


MT-KJDN 04km Temperature Performance Comparison



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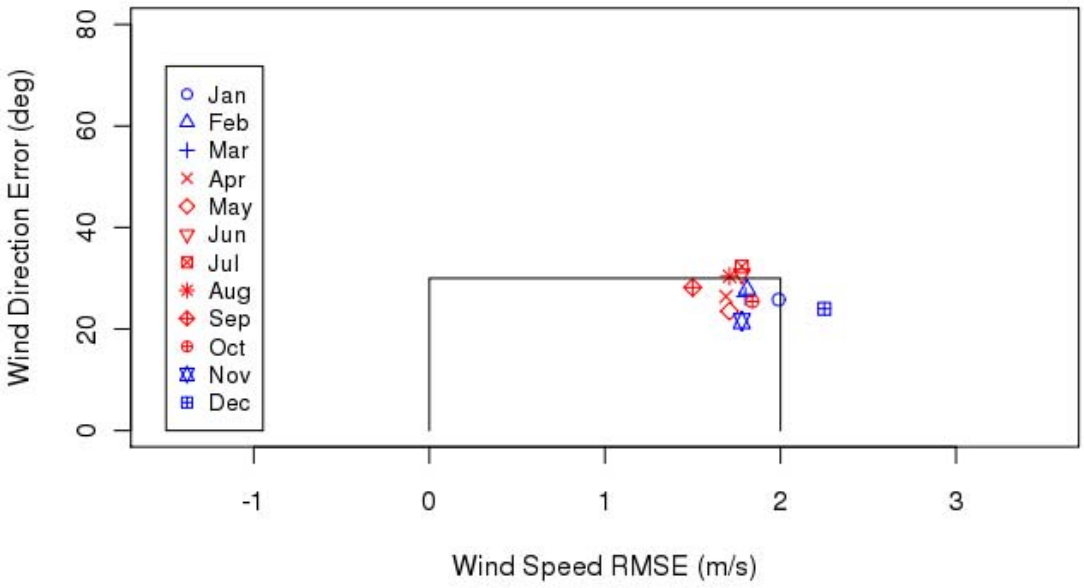
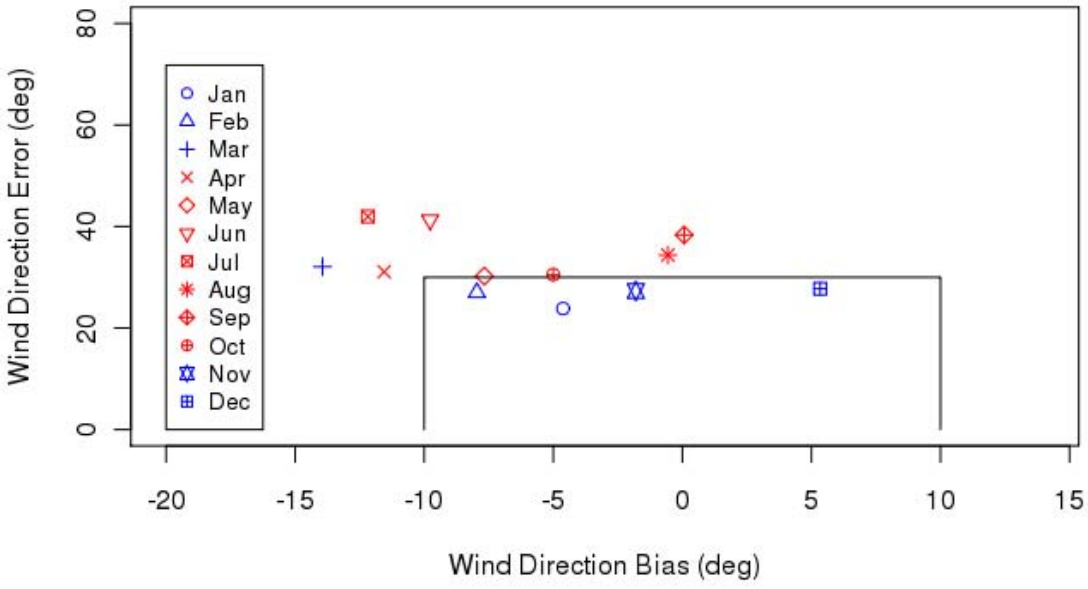
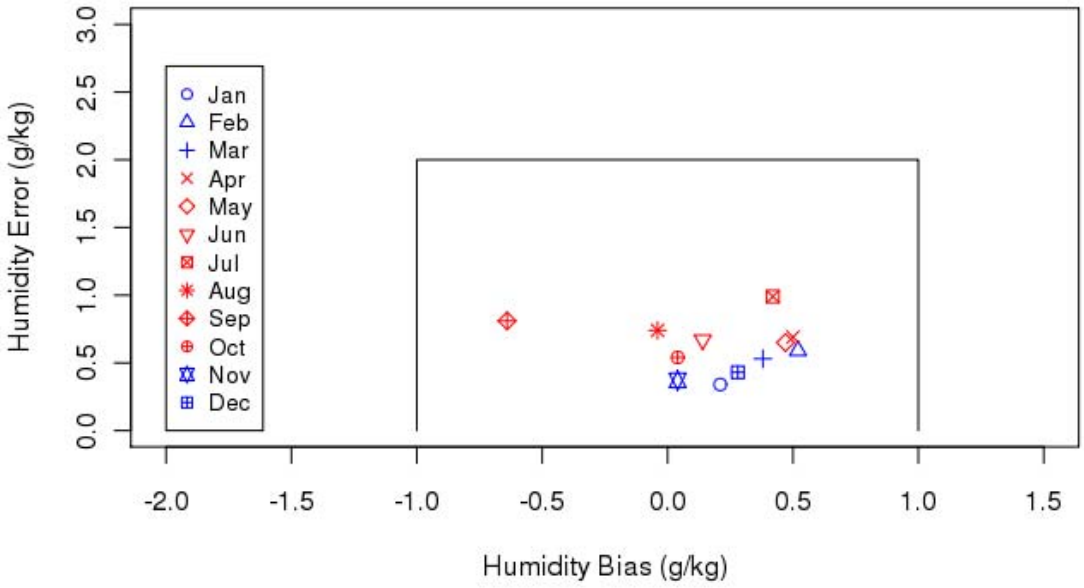


MT-KLVM 04km Wind Direction Performance Comparison



MT-KLVM 04km Humidity Performance Comparison



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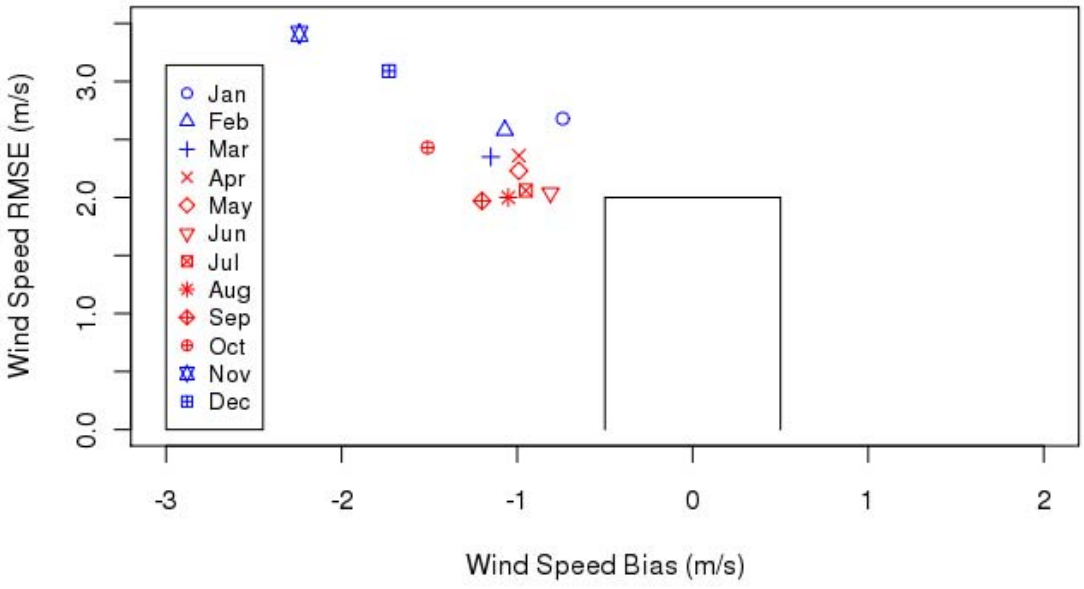
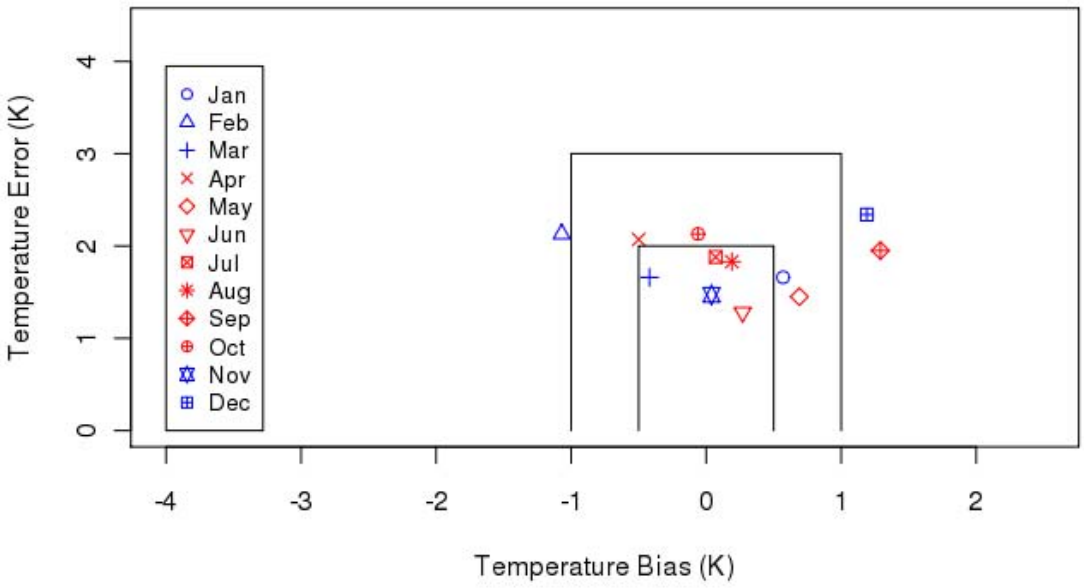


MT-KLVM 04km Temperature Performance Comparison



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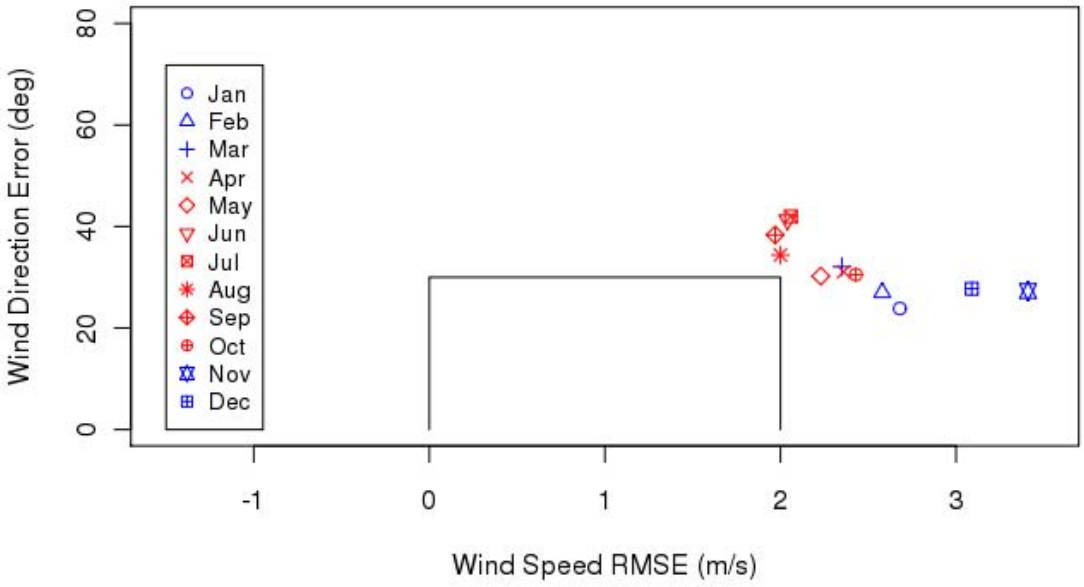

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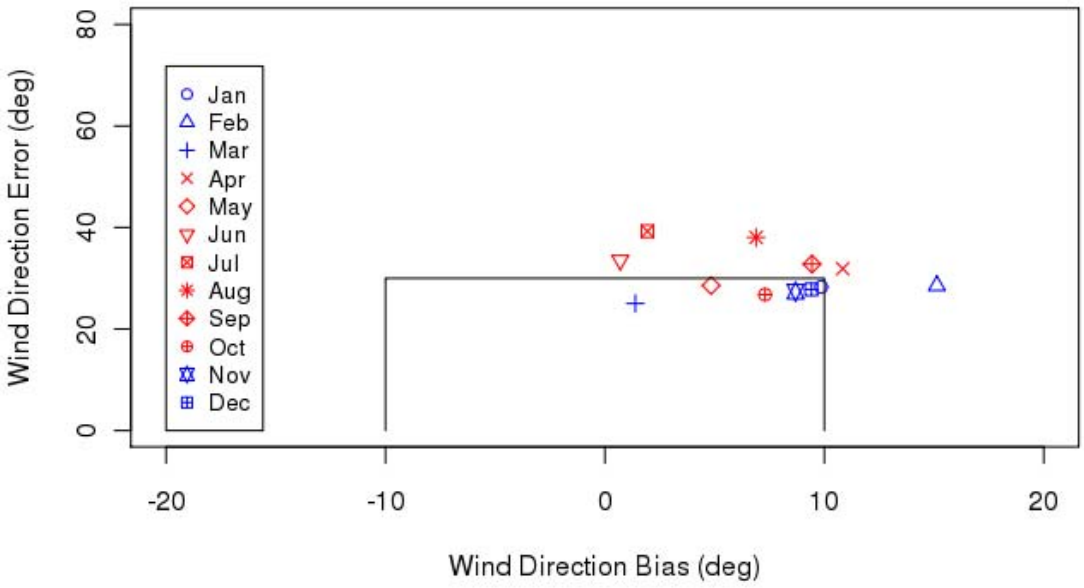

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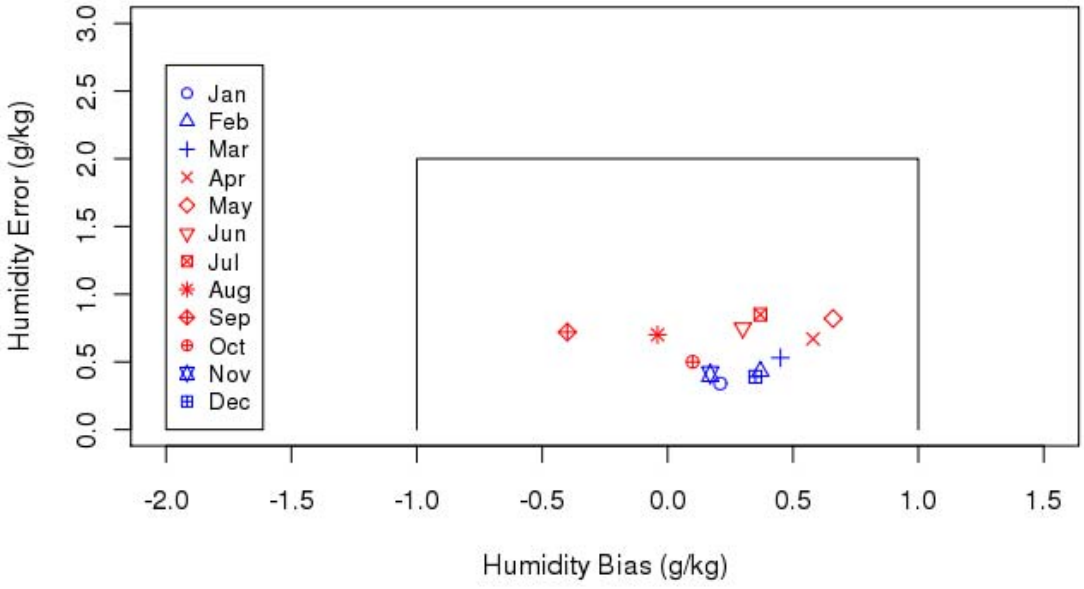

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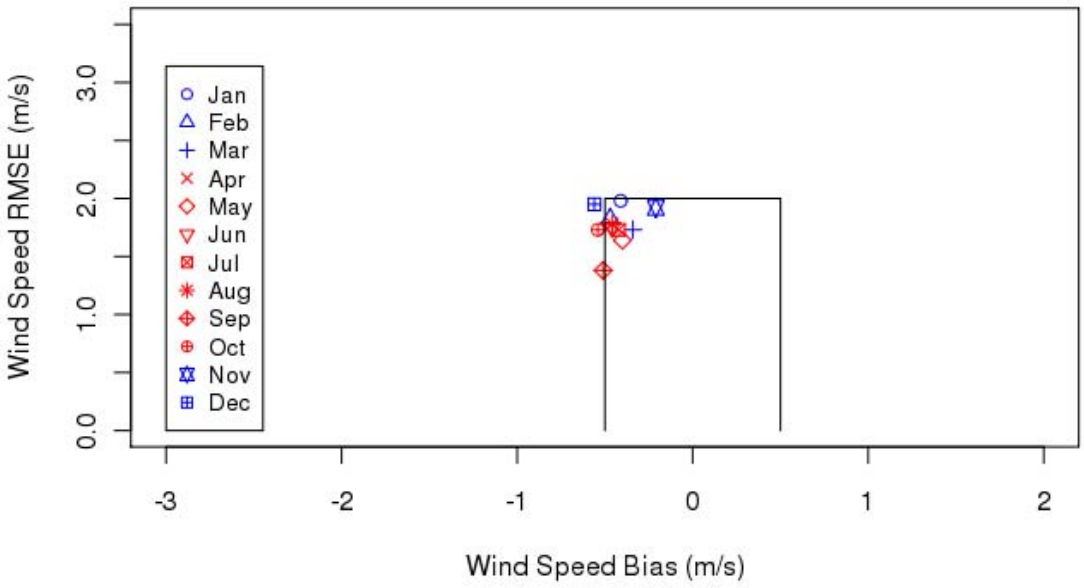
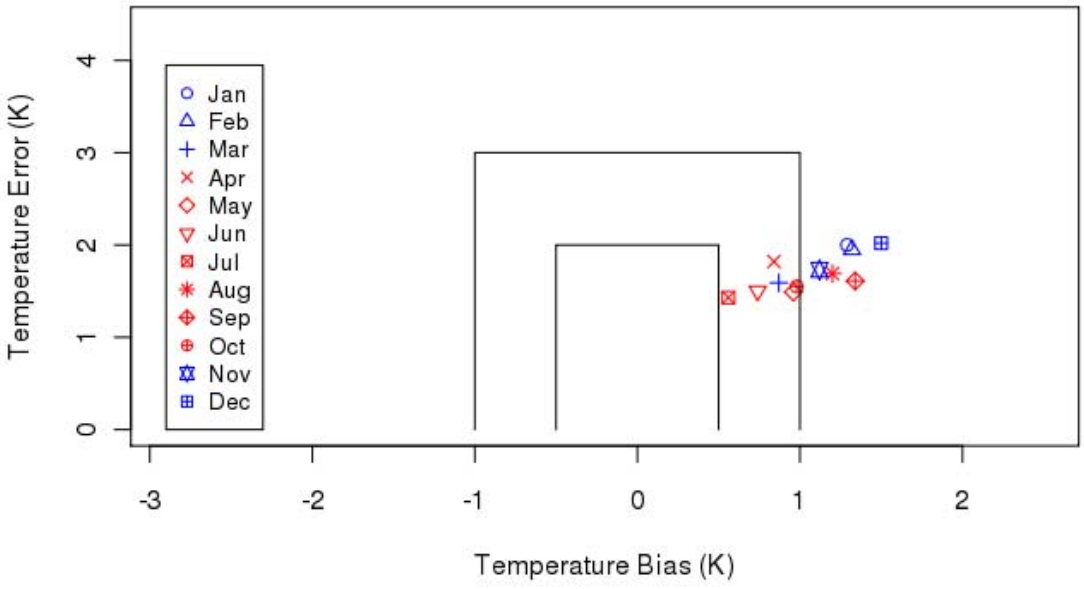


MT-KLWT 04km Temperature Performance Comparison



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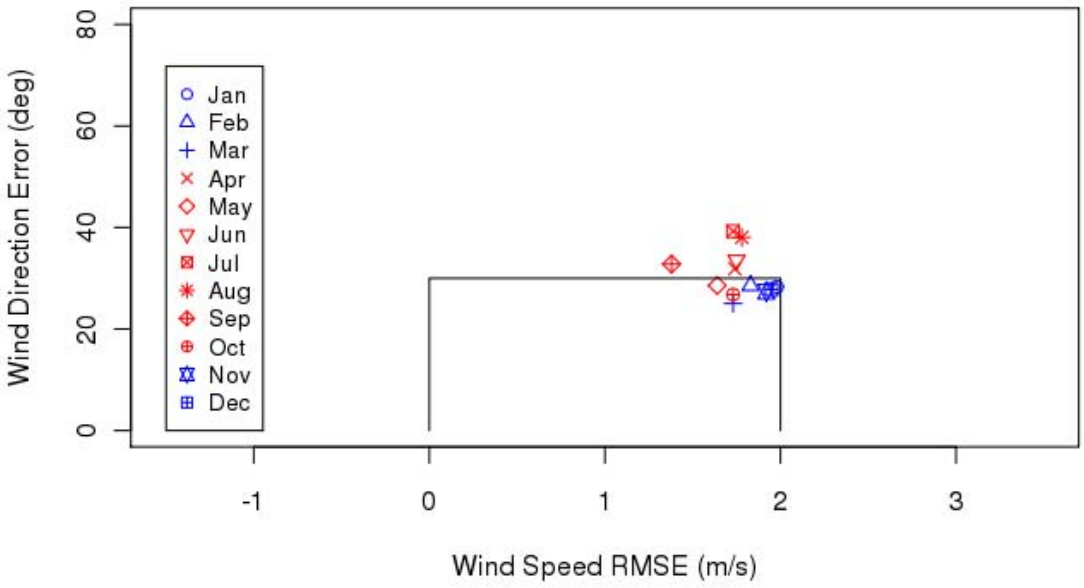
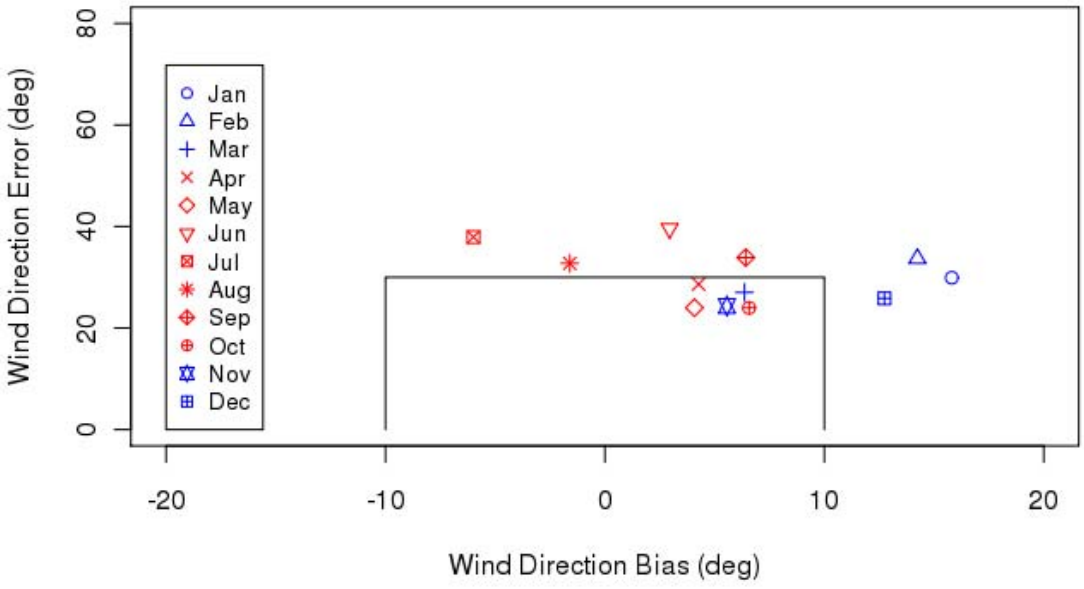


MT-KMLS 04km Wind Direction Performance Comparison



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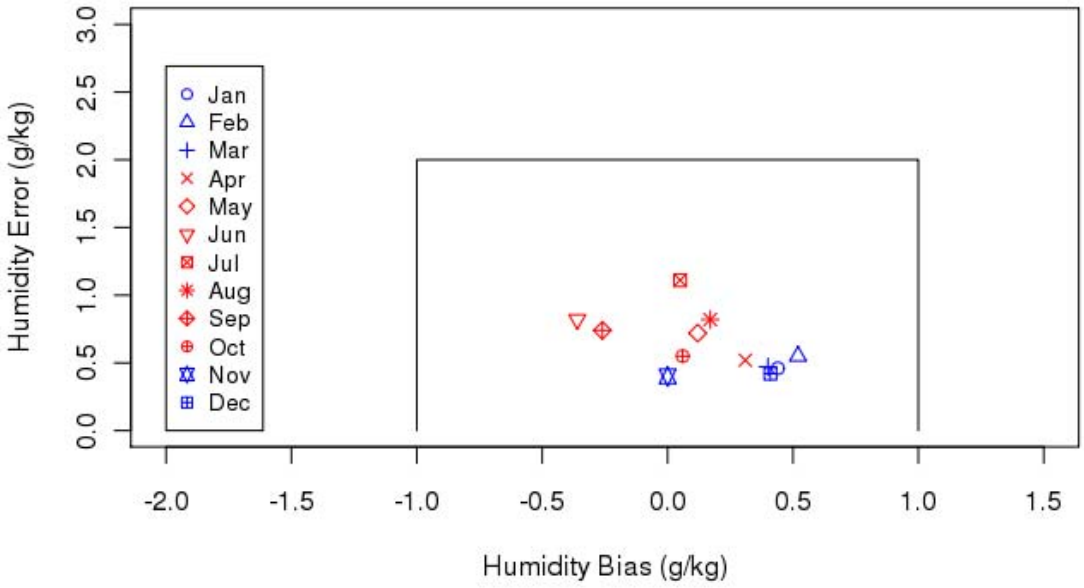

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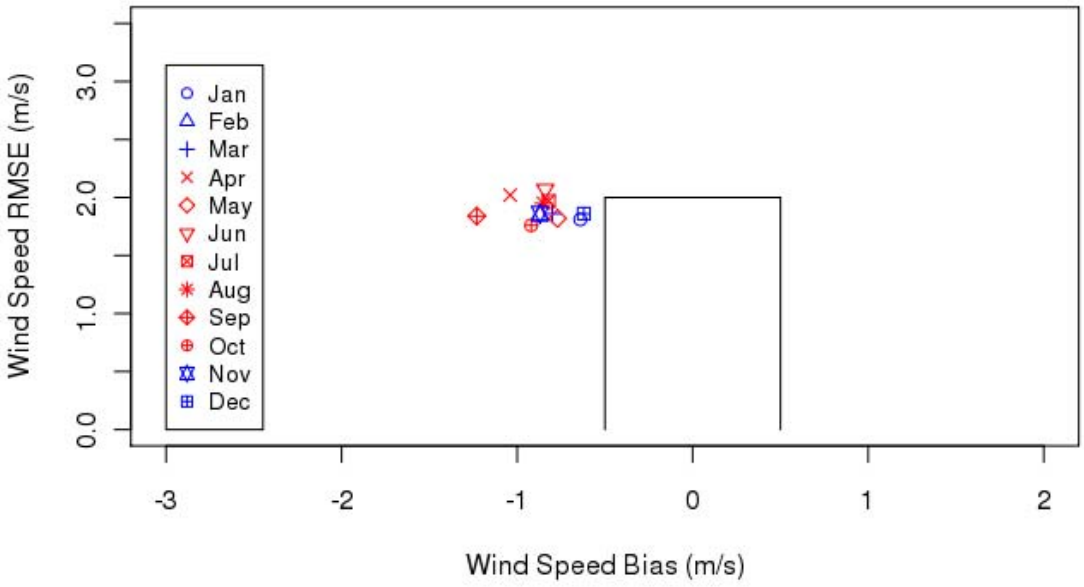
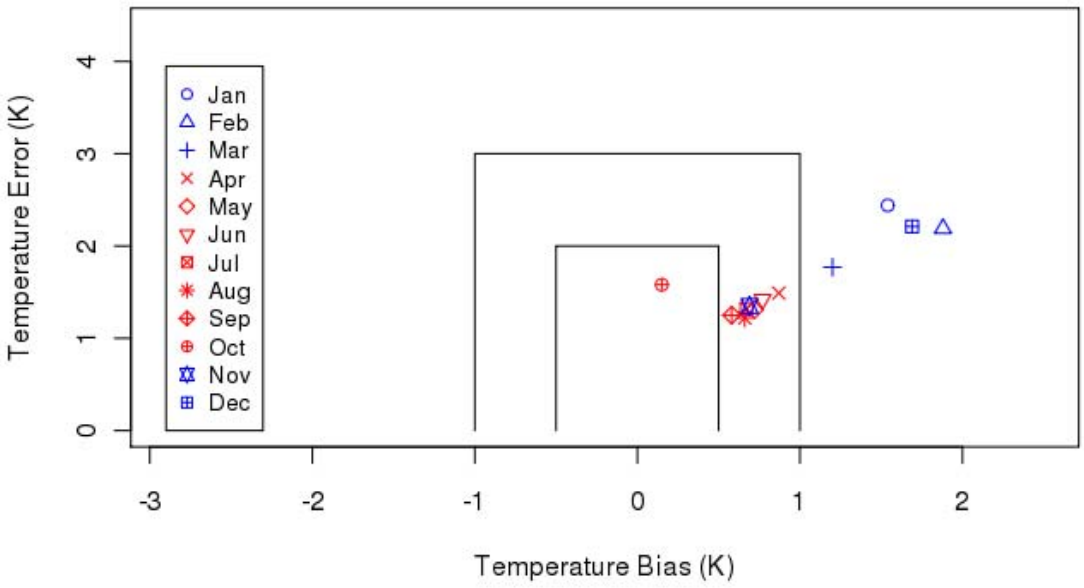


MT-KMLS 04km Temperature Performance Comparison



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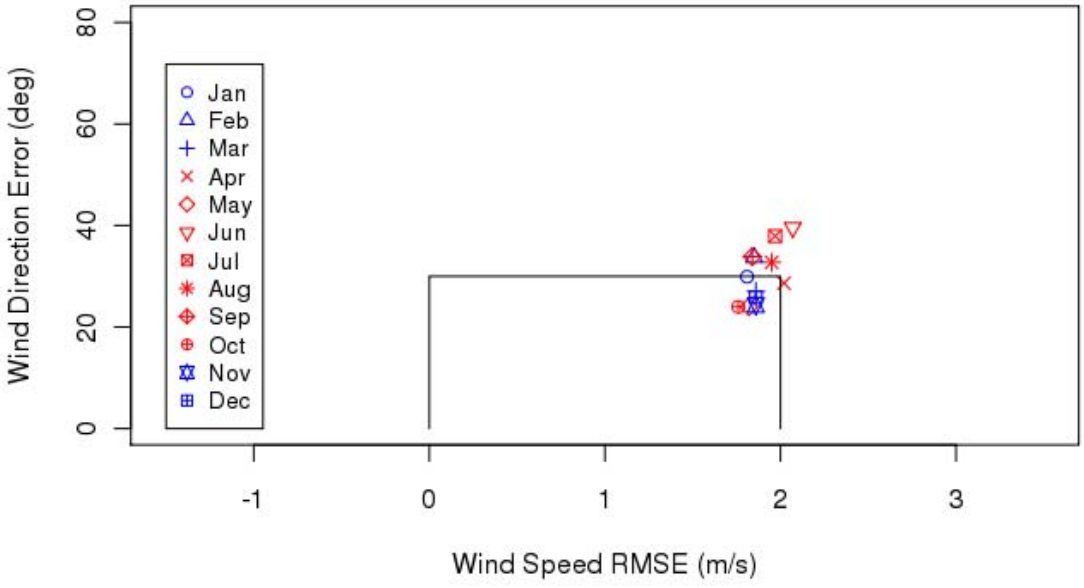
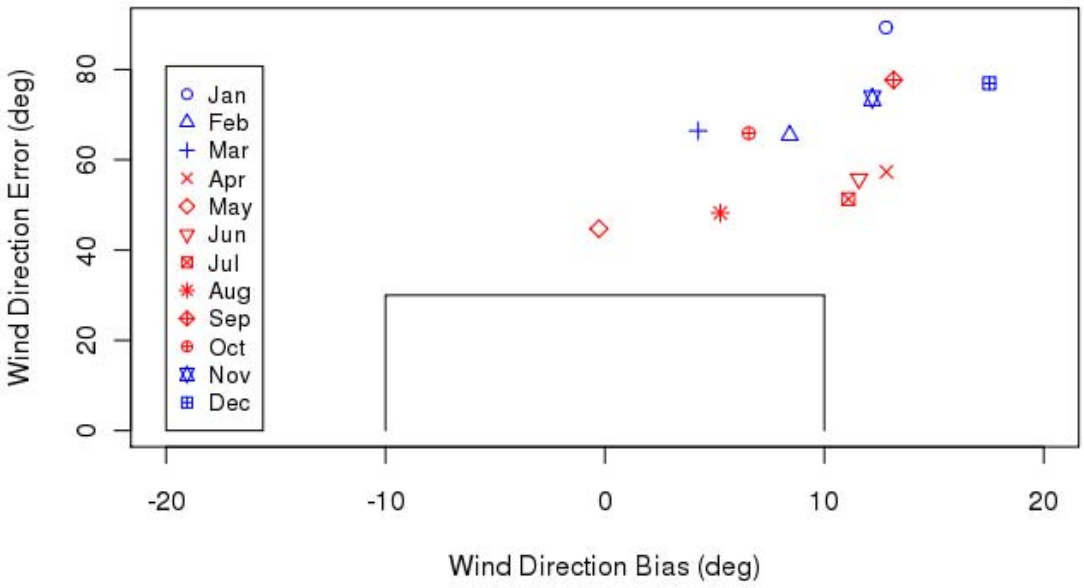
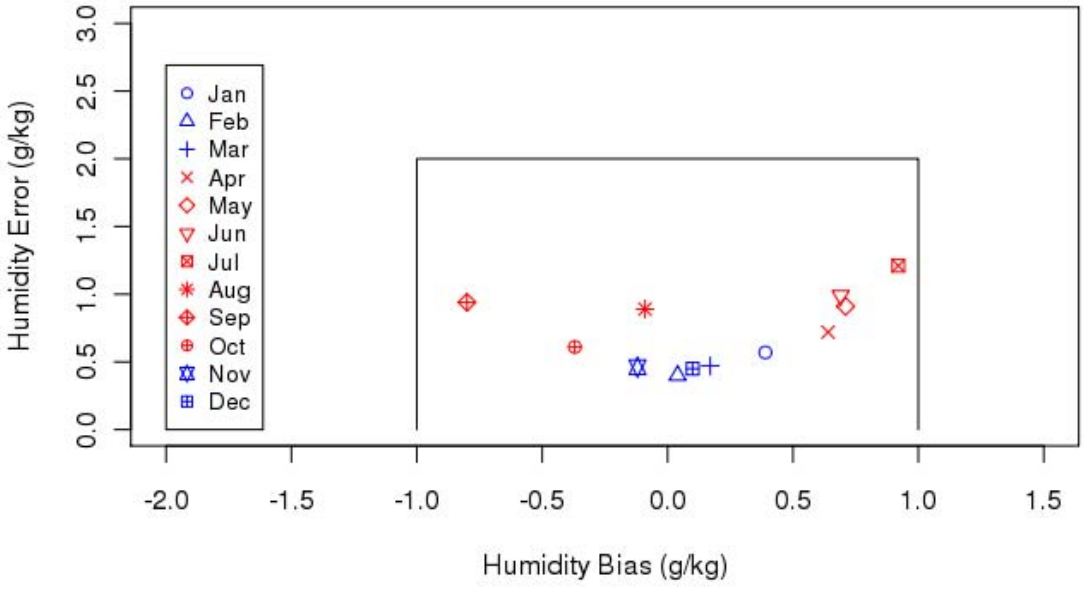


MT-KMSO 04km Wind Direction Performance Comparison



MT-KMSO 04km Humidity Performance Comparison



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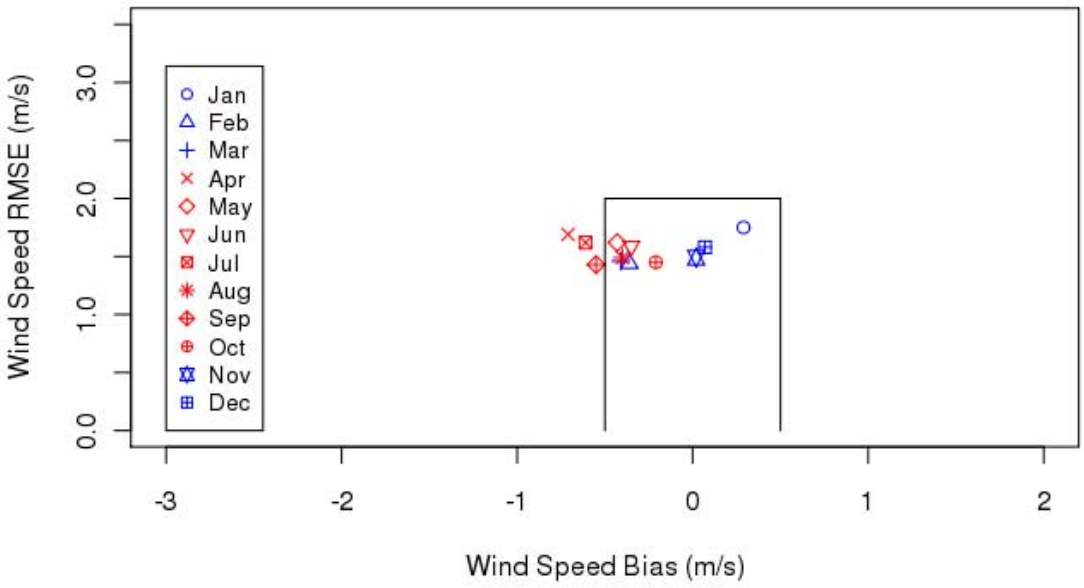
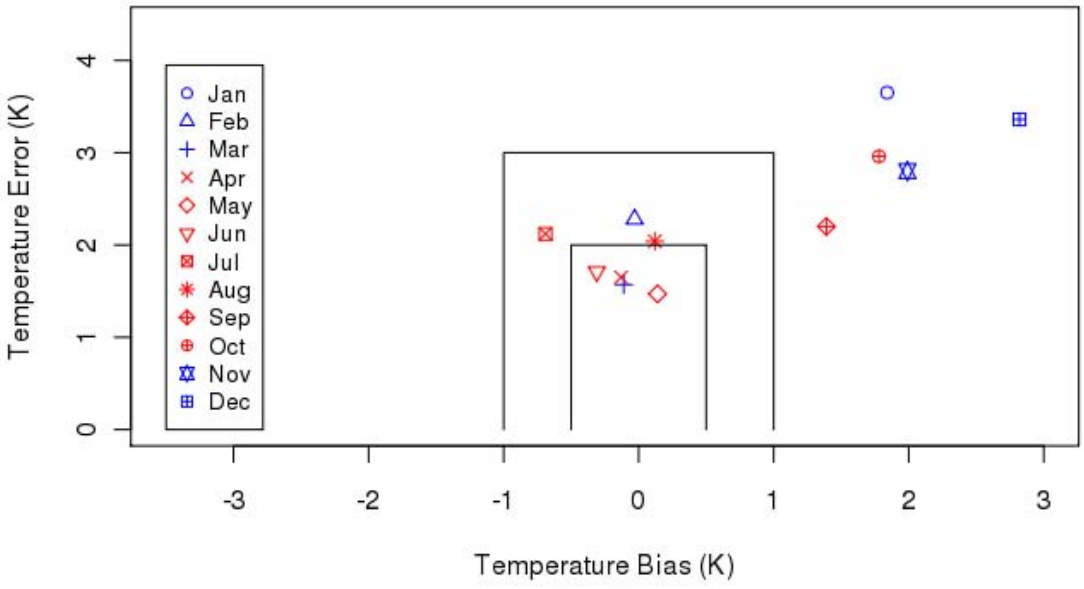


MT-KMSO 04km Temperature Performance Comparison



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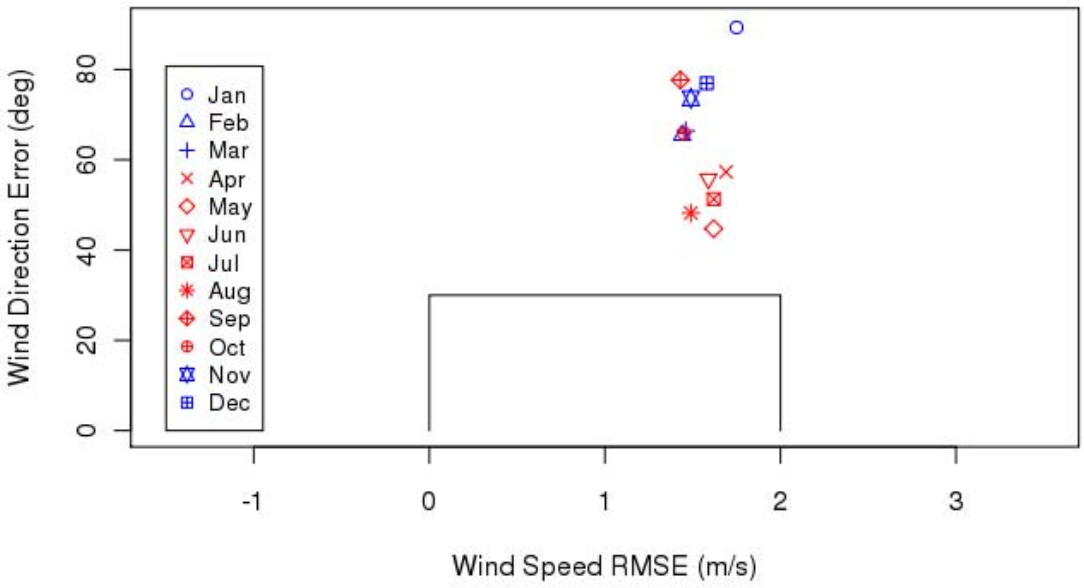

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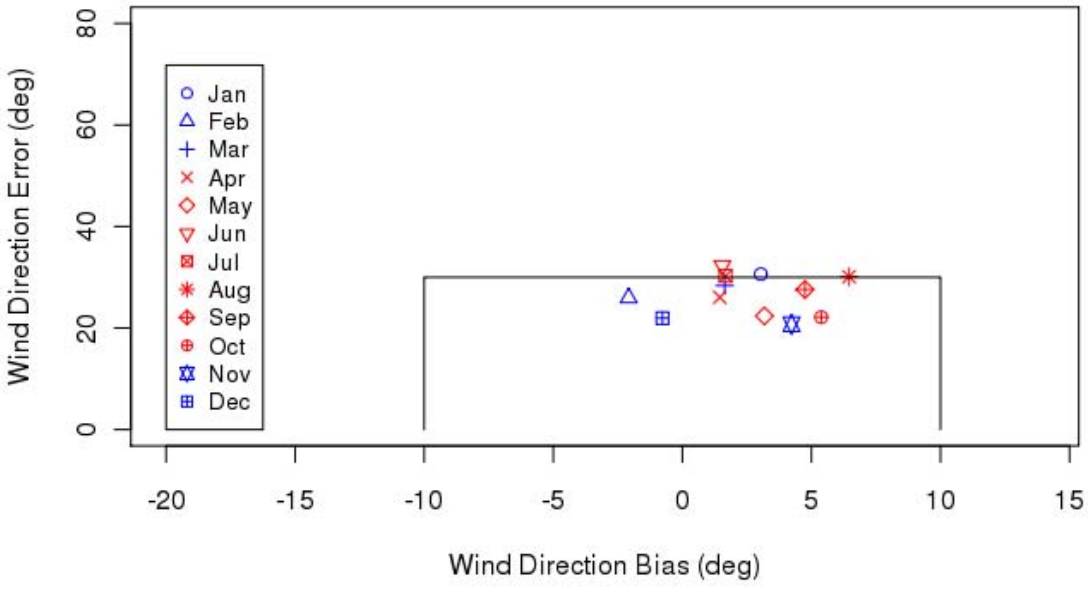
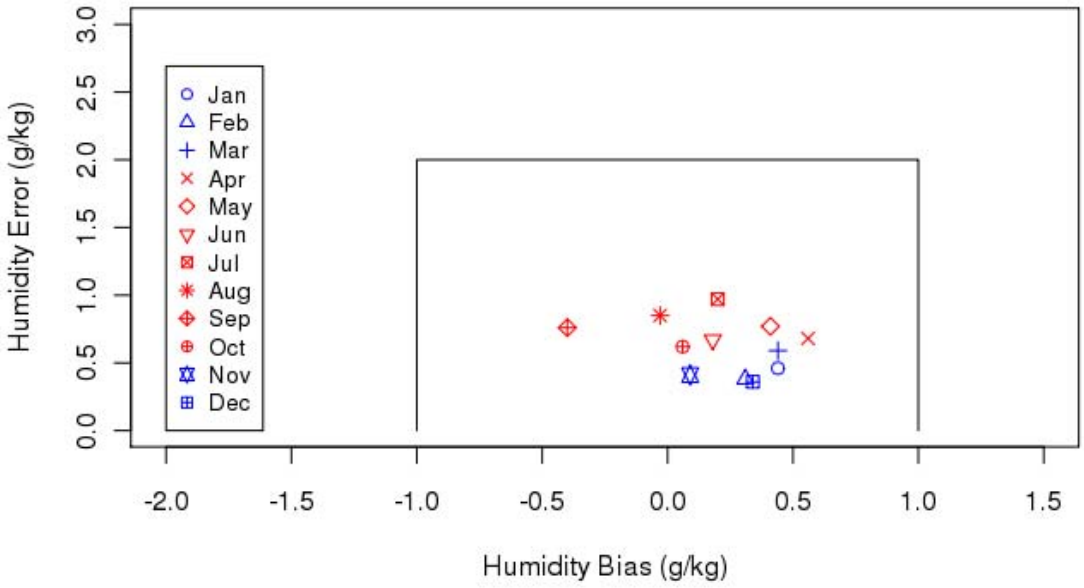
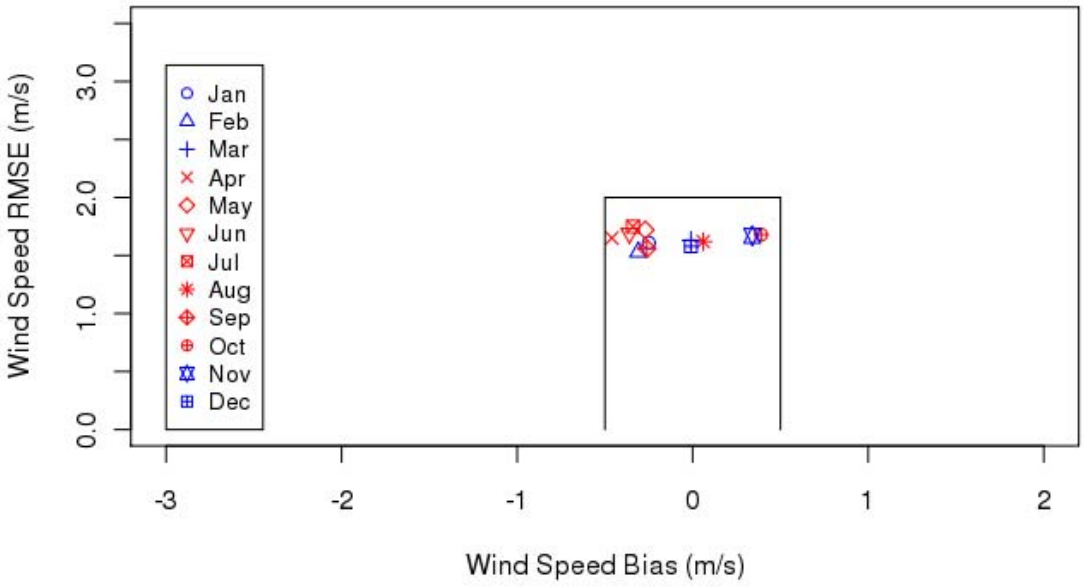


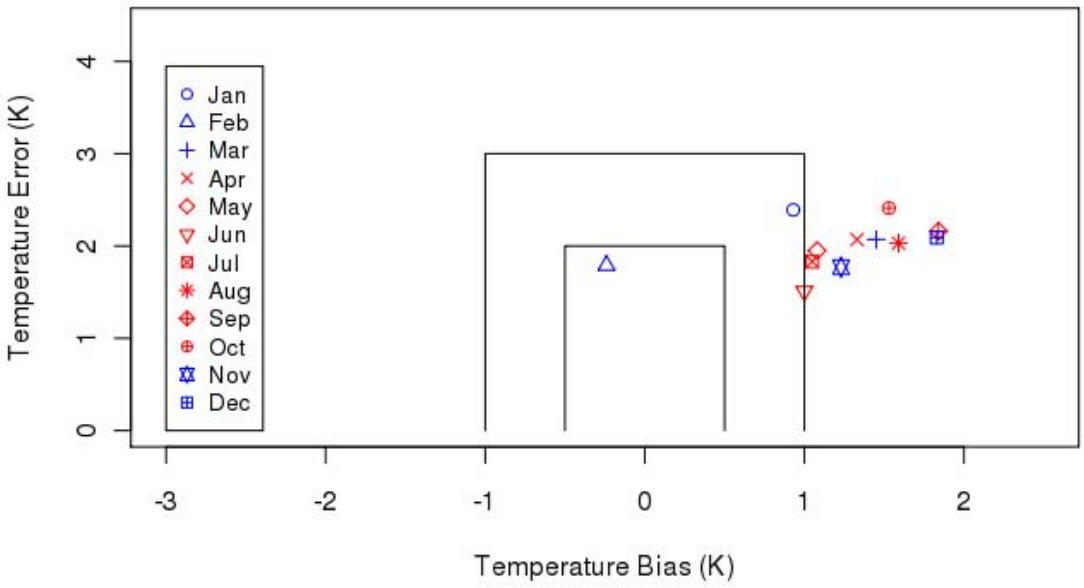
MT-KOLF 04km Humidity Performance Comparison



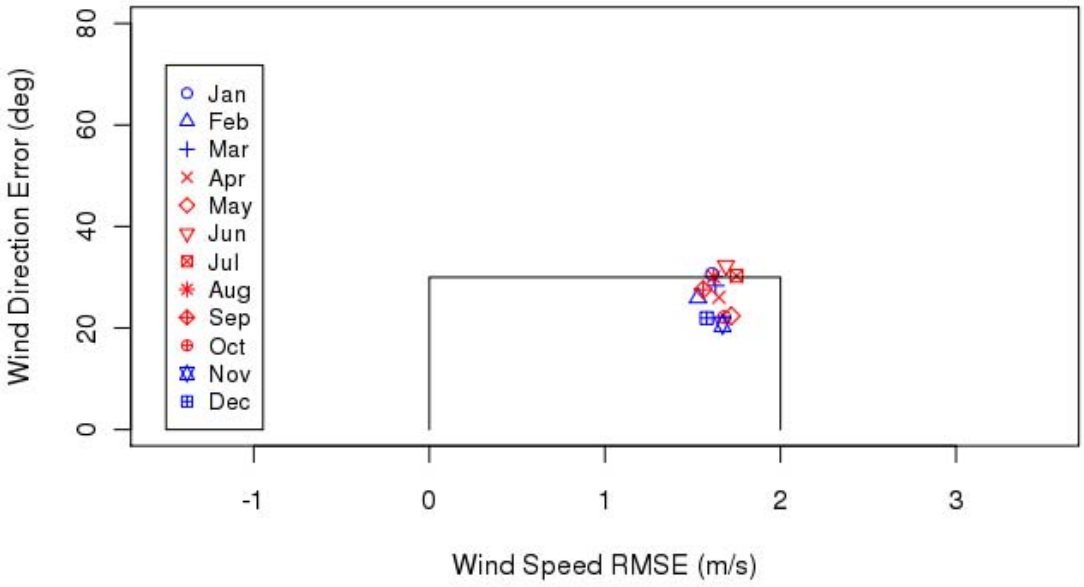
MT-KOLF 04km Wind Speed Performance Comparison



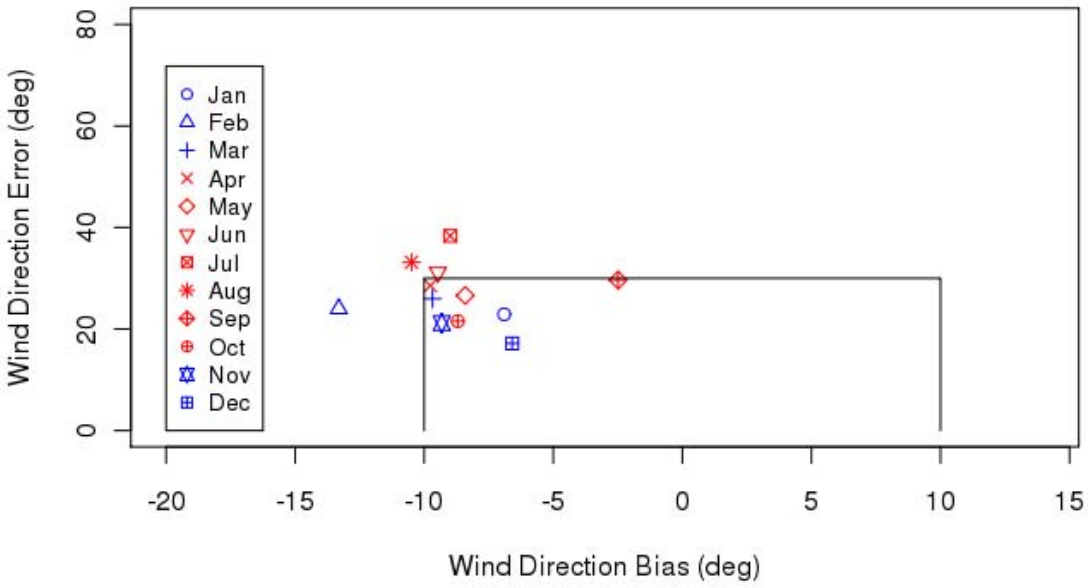
MT-KOLF 04km Temperature Performance Comparison



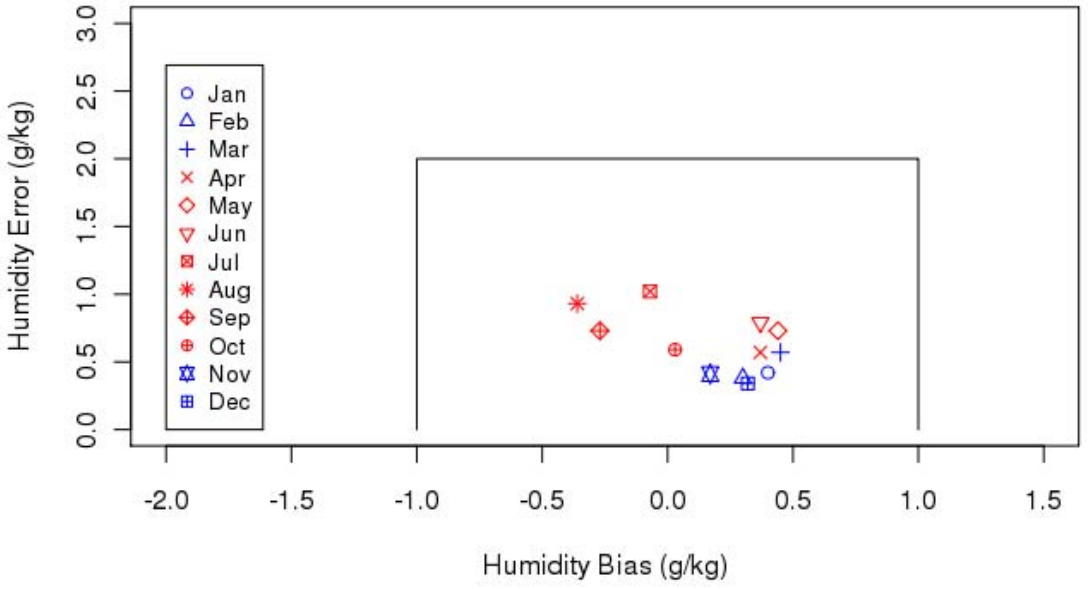
MT-KOLF 04km Wind Performance Comparison



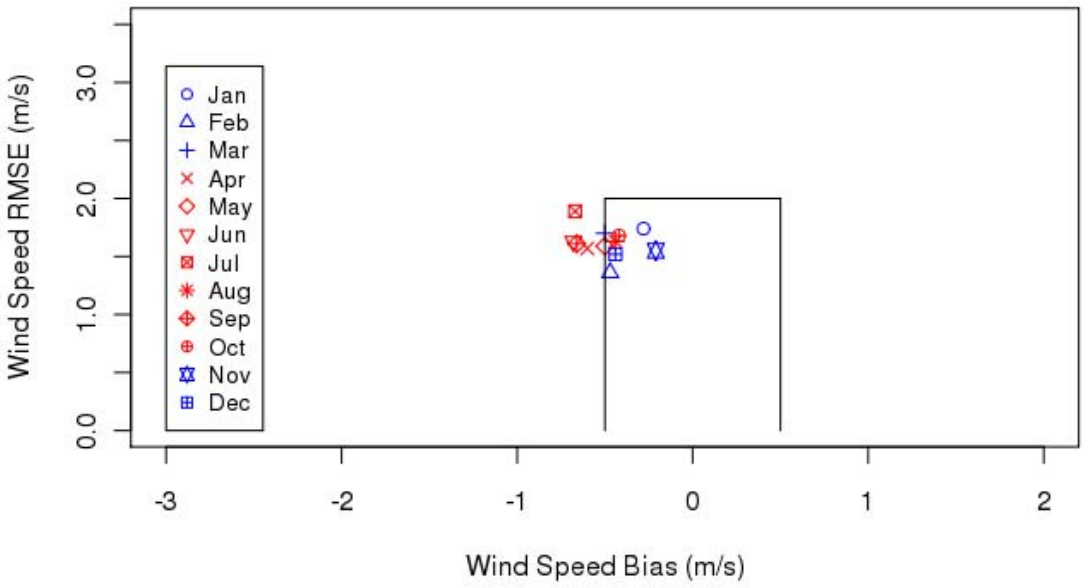
MT-KSDY 04km Wind Direction Performance Comparison



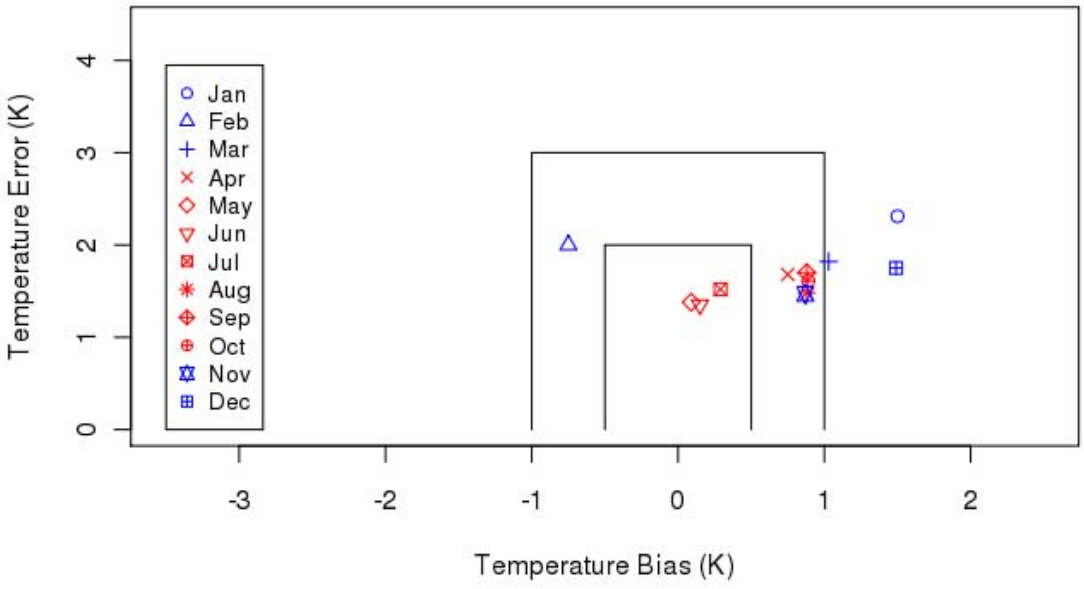
MT-KSDY 04km Humidity Performance Comparison

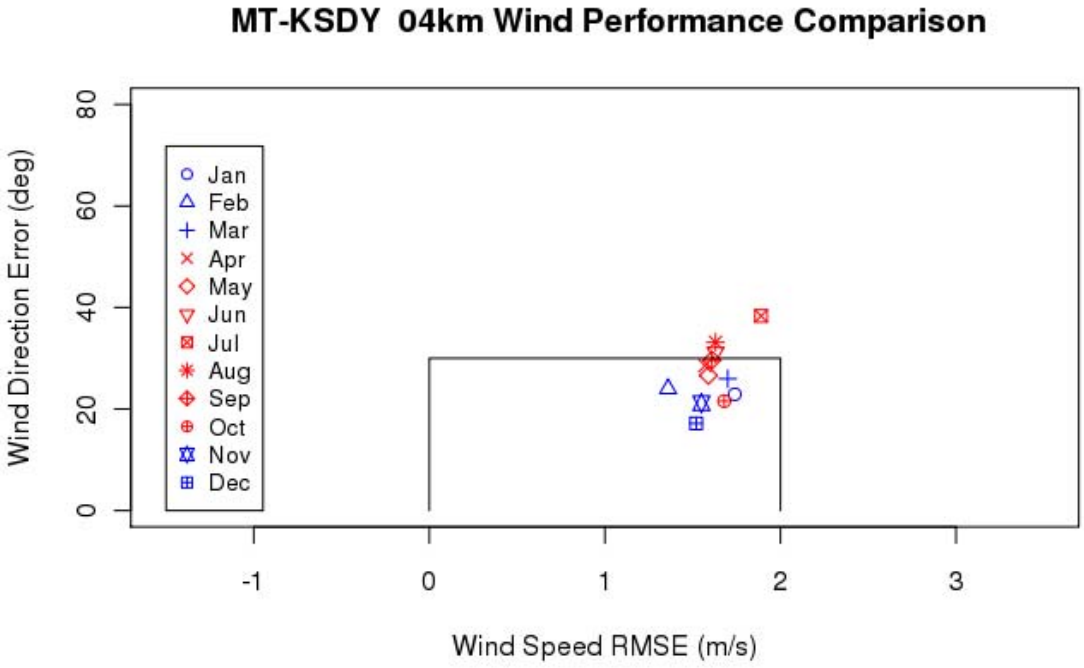


MT-KSDY 04km Wind Speed Performance Comparison



MT-KSDY 04km Temperature Performance Comparison




MT-KSDY 04km Wind Performance Comparison
Wind Direction Error (deg)
0
20
40
60
80
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
-1
0
1
2
3
Wind Speed RMSE (m/s)