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Datagrams:
Barrow
De-Icing Comparison Experiment
Supplementary Document S1

Contacts
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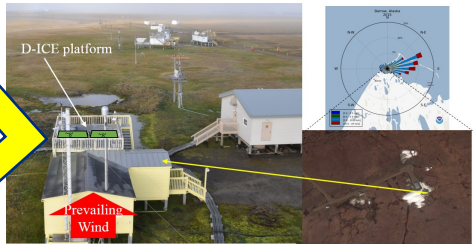
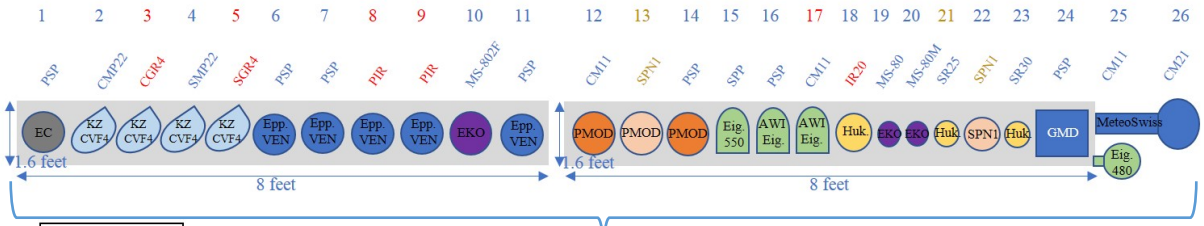


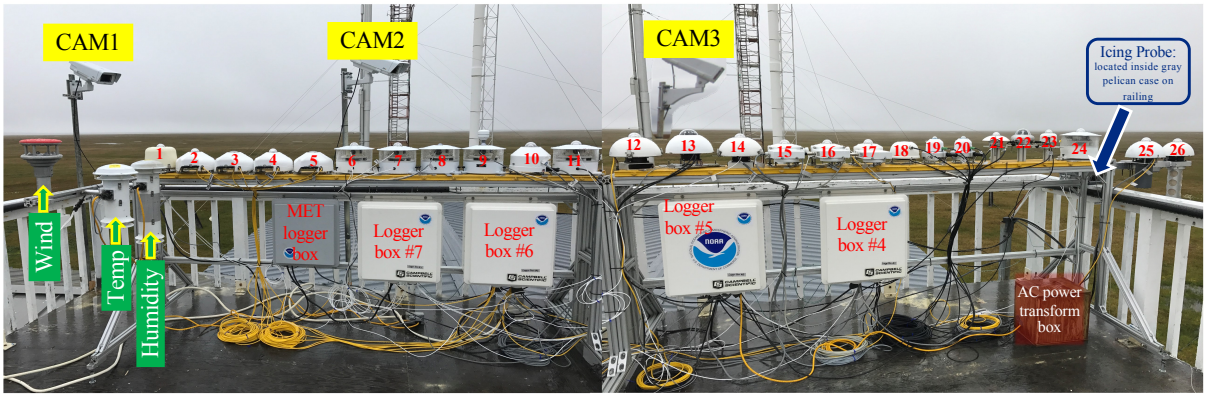


Model Details
- Shortwave
- Longwave
- Global/Diffuse

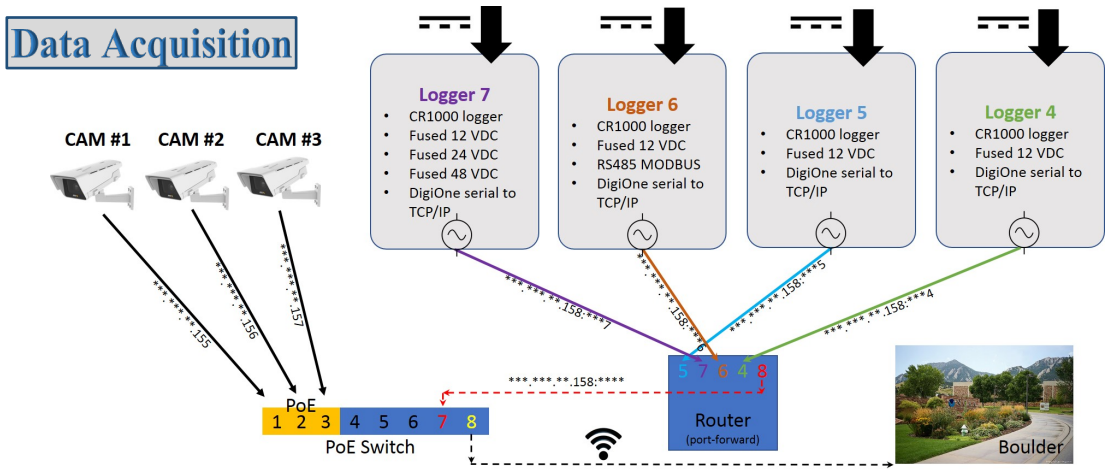
Table Specifications

Table #1

Table #2



Data Acquisition



Instrument Details

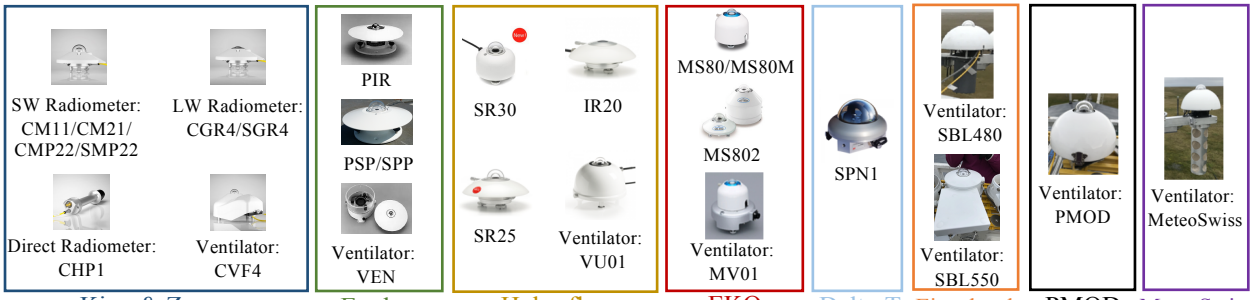


Table	Table Position	Radiometer Logger Box #	Radiometer Serial #	Ventilator Logger Box #	Ventilator Model or Serial #	Radiometer Measurement	Radiometer Manufacturer	Radiometer Model	*Radiometer Calibrations for D-ICE [μV/W/m²]*	Previous Factory Calibration (μV/W/m²)	Ventilation Manufacturer	Ventilation Quality / Quantity	Ventilation Power (Watts)	Heat Applied (y/n)	Heat Power (Watts)	Voltage
1	1	7	34231F3	6	Alert	Shortwave	Eppley	PSP	***8.397***	8.41	EC, Alert	DC / 80 [cfs]	10.3	no	n/a	12
1	2	6	160478	6	171842	Shortwave	Kipp&Zonen	CMP22	***9.697***	9.74	Kipp&Zonen	DC / 4400 [rpm]	5	yes	5.5	12
1	3	6	160183	6	171840	Longwave	Kipp&Zonen	CGR4	***C1 = 9.545 C2 = 0.998***	9.4	Kipp&Zonen	DC / 4400 [rpm]	5	yes	5.5	12
1	4	6	160002	6	171843	Shortwave	Kipp&Zonen	SMP22	***original cal***	10.07	Kipp&Zonen	DC / 4400 [rpm]	5	yes	5.5	12
1	5	6	160008	6	171841	Longwave	Kipp&Zonen	SGR4	***original cal***	11.03	Kipp&Zonen	DC / 4400 [rpm]	5	yes	5.5	12
1	6	7	26818F3	7	V6 909-12, washers/dome lift	Shortwave	Eppley	PSP	***8.449***	8.57	Eppley	DC / 80 [cfs]	10.3	no	n/a	12
1	7	7	18135F3	7	V6 809	Shortwave	Eppley	PSP	***8.556***	8.65	Eppley	DC / 80 [cfs]	10.3	no	n/a	12
1	8	5	34309F3	7	V6 808, washers/dome lift	Longwave	Eppley, PSD	PIR	***C1 = 3.39 K = 3.78***	3.54	Eppley	DC / 80 [cfs]	10.3	no	n/a	12
1	9	5	28507F3	7	V6 689	Longwave	Eppley	PIR	***C1 = 3.68 K = 3.567***	3.76	Eppley	DC / 80 [cfs]	10.3	no	n/a	12
1	10	4	F16305R	4	MS-401FU	Shortwave	EKO	MS-802F	***7.056***	7.01	EKO	DC / 3000 [rpm]	? (~4)	no	n/a	12
1	11, do NOT clean	7	26214	5	V6 910	Shortwave	Eppley, NCAR	PSP	***8.13***	8.52	Eppley, lift shield	DC / 80 [cfs]	10.3	no	n/a	12
2	12	6	130814	5	PMOD	Shortwave	Kipp&Zonen, GMD	CM11	***8.327***	8.31	PMOD	DC / 4200 [rpm]	2.3	yes	7.8	12
2	13	5	A1571		GMD PMOD	Total, Diffuse	Delta-T, GMD	SPN	***factory set***	factory set	GMD, PMOD	DC / 80 [cfs]	2.3	via inst. & ventilator	25.8	12
2	14	7	20523F3	5	PMOD	Shortwave	Eppley	PSP	***9.433***	9.67	PMOD	DC / 4200 [rpm]	2.3	yes	7.8	12
2	15	7	38172F3	4	0932153	Shortwave	Eppley	SPP	***7.756***	8.05	Eigenbrodt 550	DC / 2500 [rpm]	1.6	yes	14	24
2	16	7	26236	4	0931190	Shortwave	Eppley, NCAR	PSP	***8.627***	9.07	Eigenbrodt 550	DC / 2500 [rpm]	1.6	yes	14	24
2	17	6	130819	4	0932088	Shortwave	Kipp&Zonen, GMD	CM11	***8.681***	8.7	Eigenbrodt 550 modified	DC / 2500 [rpm]	14.7	no	n/a	48 VDC
2	18	4	4037	5	VU01	Longwave	Hukseflux	IR20-T1	***C1 = 10.144 C2 = 0.995***	10.13	Hukseflux	DC / 50 [m^3/hr]	7.8	via inst. & ventilator	11.5	12
2	19	4	S16088025	5	MV0117004	Shortwave	EKO	MS-80	***10.616***	10.64	EKO	DC / 3000 [rpm]	1.5	yes	7	12
2	20	6	S16090016	5	MV0117003	Shortwave	EKO	MS-80M	***10.772***	10.76	EKO	DC / 3000 [rpm]	1.5	yes	7	12
2	21	4	2510	none	none	Shortwave	Hukseflux	SR25-T1	***14.804***	14.87	none	n/a	n/a	via instrument	1.5	12
2	22	4	A1338	none	none	Total, Diffuse	Delta-T	SPN	***factory set***	factory set	none	n/a	n/a	via instrument	18	12
2	23	6	2060	none	none	Shortwave	Hukseflux	SR30-D1	***original cal***	10.29	none	n/a	0.6	via instrument	1.7	12
2	24, GMD BSRN	none	8041	none	n/a	Shortwave	Eppley	PSP	***n/a***	n/a	Eppley	DC / 80 [cfs]	10.3	no	n/a	12
2	25	6	130617	4	0932152	Shortwave	Kipp&Zonen, GMD	CM11	***8.741***	8.79	Eigenbrodt 480	DC / 3300 [rpm]	2.5	yes	25	24
2	26	5	970426	5 = fan 4 = heat	MeteoSwiss	Shortwave	MeteoSwiss	CM21	***19.808***	19.74	MeteoSwiss	DC / 3450 [rpm]	?	yes	10	12 VDC/ 48 VAC
n/a	none	5	Icing Probe	None	Icing Probe	Ice accretion	Anasphere	n/a	***n/a***	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	*none*	*7*	*26226*	*n/a*	*SPARE*	*Shortwave*	*Eppley, NCAR*	*PSP*	***8.053***	*8.46*	*none*	*n/a*	*n/a*	*no*	*n/a*	*n/a*

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Datagrams:
Barrow-DICE
Loggers: 4, 5, 6, 7, MET

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Logger Box #4

File name (as of 08/19/17): dice_4_YYYYMMDD_hhmm.dat
File location on ftp server: /DICE/raw/radiation/YYYY

Header Description	Time Stamp	Record Number	Logger panel temp [deg C]	Logger battery voltage [V]	Count average [60 sec]	DW total (s/n 1338) [Wm2]	DW total (s/n 1338) std	DW diffuse (s/n 1338) [Wm2]	DW diffuse (s/n 1338) std	DW SW (s/n 2510) [mV]	DW SW (s/n 2510) std	Resistance ratio (s/n 2510)	Resistance ratio (s/n 2510) std	DW SW (s/n 2510) temp [degC]	DW SW (s/n 2510) temp std	DW LW (s/n 4037) [mV]	DW LW (s/n 4037) std	Resistance ratio (s/n 4037)	Resistance ratio (s/n 4037) std	DW LW (s/n 4037) temp [degC]	DW LW (s/n 4037) temp std	DW SW (s/n F16305R) [mV]	DW SW (s/n F16305R) std	DW SW (s/n S16088025) [mV]	DW SW (s/n S16088025) std	Fan tac for CM11 (s/n 130617)	Fan tac for PIR (s/n 28507)
Header Actual	TMSTAMP	RECNBR	PTemp_Avg	batt_volt_Avg	avg_count_Tot	spn1_dt_a1338_tot_Wm2_Avg	spn1_dt_a1338_tot_Wm2_Std	spn1_dt_a1338_dif_Wm2_Avg	spn1_dt_a1338_dif_Wm2_Std	sr25_2510_mV_Avg	sr25_2510_mV_Std	sr25_2510_BrHalf3W_RsRo_Avg	sr25_2510_BrHalf3W_RsRo_Std	sr25_2510_DegC_Avg	sr25_2510_DegC_Std	ir20_4037_mV_Avg	ir20_4037_mV_Std	ir20_4037_BrHalf3W_RsRo_Avg	ir20_4037_BrHalf3W_RsRo_Std	ir20_4037_DegC_Avg	ir20_4037_DegC_Std	ms802f_F16305R_mV_Avg	ms802f_F16305R_mV_Std	ms80_S16088025_mV_Avg	ms80_S16088025_mV_Std	cm11_130617_fantach_Avg	pir_28507_fantach_Avg
Data Example	8/30/2017 10:56	6400	10.58436	11.90396	60	0.6583332	0.4923724	0	0	-0.00966756	0.001076361	1.013033	6.80E-05	3.336769	0.01742254	-0.4332291	0.002262699	1.02375	3.94E-05	6.082957	0.0101039	-0.00350863	0.000232819	-0.001203119	0.000403332	105.7667	177.8333
Data Example	8/30/2017 10:57	6401	10.58436	11.89671	60	0.7483333	0.5725649	0.02333333	0.1792267	-0.008549923	0.001668052	1.013036	6.66E-05	3.337425	0.01705992	-0.4363717	0.001109406	1.023743	4.26E-05	6.080985	0.01091017	-0.002574102	0.000350362	-0.000688293	0.000559897	105.8	177.3667
Data Example	8/30/2017 10:58	6402	10.58436	11.90552	60	0.7033333	0.4074173	0	0	-0.006817586	0.000601866	1.013039	6.50E-05	3.338082	0.01666357	-0.4294771	0.003663042	1.023745	3.84E-05	6.081643	0.009846668	-0.002333476	0.000343634	-0.000201451	0.000421142	107.9333	177.7833

Legend: Data | Diagnostics | Logger Info

Logger Box #5

File name (as of 08/19/17): dice_5_YYYYMMDD_hhmm.dat
File location on ftp server: /DICE/raw/radiation/YYYY

Header Description	Time Stamp	Record Number	Logger panel temp [deg C]	Logger battery voltage [V]	Count average [60 sec]	DW total (s/n 1571) [Wm2]	DW total (s/n 1571) std	DW diffuse (s/n 1571) [Wm2]	DW diffuse (s/n 1571) std	DW SW (s/n 970426) [mV]	DW SW (s/n 970426) std	DW SW (s/n 970426) temp [degC]	DW SW (s/n 970426) temp std	Resistance ratio (s/n 970426)	Resistance ratio (s/n 970426) std	DW LW (s/n 28507) [mV]	DW LW (s/n 28507) std	DW LW (s/n 28507) case temp [degC]	DW LW (s/n 28507) case temp std	DW LW (s/n 28507) dome temp [degC]	DW LW (s/n 28507) dome temp std
Header Actual	TMSTAMP	RECNBR	PTemp_Avg	batt_volt_Avg	avg_count_Tot	spn1_gmd_a1571_tot_Wm2_Avg	spn1_gmd_a1571_tot_Wm2_Std	spn1_gmd_a1571_dif_Wm2_Avg	spn1_gmd_a1571_dif_Wm2_Std	cm21_970426_mV_Avg	cm21_970426_mV_Std	cm21_970426_DegC_Avg	cm21_970426_DegC_Std	cm21_970426_BrHalf3W_RsRo_Avg	cm21_970426_BrHalf3W_RsRo_Std	pir_28507_mV_Avg	pir_28507_mV_Std	pir_28507_CaseDegC_Avg	pir_28507_CaseDegC_Std	pir_28507_DomeDegC_Avg	pir_28507_DomeDegC_Std
Data Example	8/30/2017 10:56	6393	8.413227	11.98126	60	1.14	0.4017462	0.155	0.4267806	-0.05884783	0.000398467	7.121752	0.04141129	1.027802	0.00016149	-0.09285997	0.000784594	2.380341	0	2.353973	0
Data Example	8/30/2017 10:57	6394	8.413227	11.98772	60	1.156667	0.3900284	0.08666667	0.324277	-0.05946347	0.000363174	7.149863	0.03906514	1.027912	0.000152344	-0.09487614	0.000299847	2.380373	8.30E-05	2.35401	8.72E-05
Data Example	8/30/2017 10:58	6395	8.413227	11.9831	60	1.365	0.451599	0.31	0.5623462	-0.05818792	0.00031462	7.171176	0.01028669	1.027995	4.01E-05	-0.09260146	0.001281734	2.380585	0	2.354218	0

Header Description	Case resistance (s/n 28507) [Ohm]	Case resistance (s/n 28507) std	Dome resistance (s/n 28507) [Ohm]	Dome resistance (s/n 28507) std	DW LW (s/n 34309) [mV]	DW LW (s/n 34309) std	DW LW (s/n 34309) case temp [degC]	DW LW (s/n 34309) case temp std	DW LW (s/n 34309) dome temp [degC]	DW LW (s/n 34309) dome temp std	Case resistance (s/n 34309) [Ohm]	Case resistance (s/n 34309) std	Dome resistance (s/n 34309) [Ohm]	Dome resistance (s/n 34309) std	Fan tac for MS80M (s/n S16090016)	Fan tac for MS80 (s/n S16088025)	Fan Status for IR20 (s/n 4037)	Ice probe ID	Ice probe temp [degC]	Ice probe temp std	Ice probe frequency	Ice probe frequency std
Header Actual	pir_28507_CaseR_Avg	pir_28507_CaseR_Std	pir_28507_DomeR_Avg	pir_28507_DomeR_Std	pir_34309_mV_Avg	pir_34309_mV_Std	pir_34309_CaseDegC_Avg	pir_34309_CaseDegC_Std	pir_34309_DomeDegC_Avg	pir_34309_DomeDegC_Std	pir_34309_CaseR_Avg	pir_34309_CaseR_Std	pir_34309_DomeR_Avg	pir_34309_DomeR_Std	ms80m_S16090016_fantach_Avg	ms80_S16088025_fantach_Avg	ir20_4037_fanstatus_Avg	ice_probe_id	ice_probe_DegC_Avg	ice_probe_DegC_Std	ice_probe_Freq_Hz_Avg	ice_probe_Freq_Hz_Std
Data Example	26407.68	0	26439.58	0	-0.08584634	0.000726606	2.380341	0	2.301208	0	26407.68	0	26503.47	0	103.2167	103.3167	-913.9068	29	10.93334	0.2763854	44.38733	0.009638107
Data Example	26407.64	0.102246	26439.54	0.11019	-0.08776651	0.000332951	2.380377	8.72E-05	2.299055	0.004865289	26407.63	0.1074004	26506.09	5.912031	103.4167	103.5	-902.9698	29	10.95001	0.3	44.39367	0.01182717
Data Example	26407.38	0	26439.28	0	-0.08548609	0.001212699	2.380585	0	2.29731	0.007411004	26407.38	0	26508.22	8.99426	103.2167	103.3667	-912.4076	29	10.95001	0.3	44.39233	0.01321145

Legend: Data | Diagnostics | Logger Info

Logger Box #6

File name (as of 08/19/17): dice_6_YYYYMMDD_hhmm.dat
File location on ftp server: /DICE/raw/radiation/YYYY

Header Description	Time Stamp	Record Number	Logger panel temp [deg C]	Logger battery voltage [V]	Count average [60 sec]	DW SW (s/n S16090016) [mV]	DW SW (s/n S16090016) std	DW SW (s/n S16090016) temp [deg C]	DW SW (s/n S16090016) temp std	DW SW (s/n S16090016) irradiance [W/m2]	DW SW (s/n S16090016) irradiance std	DW SW (s/n 130814) [mV]	DW SW (s/n 130814) std	DW SW (s/n 130819) [mV]	DW SW (s/n 130819) std	DW SW (s/n 130617) [mV]	DW SW (s/n 130617) std	DW SW (s/n 160478) [mV]	DW SW (s/n 160478) std	DW SW (s/n 160478) case resistance [Ohm]	DW SW (s/n 160478) case resistance std
Header Actual	TMSTAMP	RECNBR	PTemp_Avg	batt_volt_Avg	avg_count_Tot	ms80m_S16090016_mV_Avg	ms80m_S16090016_mV_Std	ms80m_S16090016_DegC_Avg	ms80m_S16090016_DegC_Std	ms80m_S16090016_Irr_Avg	ms80m_S16090016_Irr_Std	cm11_130814_mV_Avg	cm11_130814_mV_Std	cm11_130819_mV_Avg	cm11_130819_mV_Std	cm11_130617_mV_Avg	cm11_130617_mV_Std	cmp22_160478_mV_Avg	cmp22_160478_mV_Std	cmp22_160478_CaseR_Avg	cmp22_160478_CaseR_Std
Data Example	8/30/2017 10:56	6381	7.047963	12.05106	60	-9.87E-05	0.000234441	3.38422	0.004257756	-0.009168711	0.02178818	0.005543747	0.000168065	0.01178257	6.04E-05	0.000818392	0.000349343	-0.005448455	0.00016012	25775.43	0
Data Example	8/30/2017 10:57	6382	7.048641	12.05235	60	0.000890059	0.000450806	3.390357	0.003630424	0.08271926	0.04189648	0.005706242	6.04E-05	0.01179925	9.30E-05	0.00056614	0.000375976	-0.00582956	0.000265294	25775.43	0
Data Example	8/30/2017 10:58	6383	7.048641	12.05262	60	0.00091396	0.000365684	3.386857	0.004130805	0.08494055	0.03398547	0.005902404	0.000167325	0.01204023	0.000182152	0.002029125	0.000330469	-0.00590801	0.000207031	25775.43	0

Header Description	DW SW (s/n 160478) temp [deg C]	DW SW (s/n 160478) temp std	DW LW (s/n 160183) [mV]	DW LW (s/n 160183) std	DW LW (s/n 160183) temp [deg C]	DW LW (s/n 160183) temp std	DW LW (s/n 160183) case resistance [Ohm]	DW LW (s/n 160183) case resistance std	DW LW (s/n 160008) temp compensated net radiation [W/m2]	DW LW (s/n 160008) temp compensated net radiation std	DW LW (s/n 160008) raw [W/m2]	DW LW (s/n 160008) raw std	DW LW (s/n 160008) body temp [deg C]	DW LW (s/n 160008) body temp std	DW LW (s/n 160008) external power sensor	DW LW (s/n 160008) temp compensated LWD [w/m2]	DW LW (s/n 160008) temp compensated LWD std	DW LW (s/n 160008) raw LWD [W/m2]	DW LW (s/n 160008) raw LWD std
Header Actual	cmp22_160478_DegC_Avg	cmp22_160478_DegC_Std	cgr4_160183_mV_Avg	cgr4_160183_mV_Std	cgr4_160183_DegC_Avg	cgr4_160183_DegC_Std	cgr4_160183_CaseR_Avg	cgr4_160183_CaseR_Std	sgr4_160008_tcomp_rad_Avg	sgr4_160008_tcomp_rad_Std	sgr4_160008_raw_sensordata_Avg	sgr4_160008_raw_sensordata_Std	sgr4_160008_body_DegC_Avg	sgr4_160008_body_DegC_Std	sgr4_160008_ext_powersensor_Avg	sgr4_160008_tcomp_lwd_Avg	sgr4_160008_tcomp_lwd_Std	sgr4_160008_lwd_Avg	sgr4_160008_lwd_Std
Data Example	2.910736	0	-0.2494966	0.002045246	2.937225	0	25744.29	0	-25.21667	0.4119736	-25.03333	0.1795055	3	0	114	303.5667	0.4955356	303.7667	0.4229526
Data Example	2.910736	0	-0.253485	0.000452471	2.937225	0	25744.29	0	-26	0	-25.96667	0.1795055	3	0	114	303	0	303	0
Data Example	2.910736	0	-0.2478617	0.002801755	2.937225	0	25744.29	0	-25.2	0.4	-25.08333	0.2763854	3	0	114	303.6833	0.4651762	303.8167	0.3869396

Header Description	DW SW (s/n 160002) temp compensated net radiation [W/m2]	DW SW (s/n 160002) temp compensated net radiation std	DW SW (s/n 160002) raw [W/m2]	DW SW (s/n 160002) raw std	DW SW (s/n 160002) body temp [deg C]	DW SW (s/n 160002) body temp std	DW SW (s/n 160002) external power sensor	DW SW (s/n 2060) temp [deg C]	DW SW (s/n 2060) temp std	DW SW (s/n 2060) irradiance [W/m2]	DW SW (s/n 2060) irradiance std	DW SW (s/n 2060) irradiance corrected [W/m2]	DW SW (s/n 2060) irradiance corrected std	Fan tac for CGR4 (s/n 160183)	Fan tac for SMP22 (s/n 160002)	Fan tac for SCGR4 (s/n 160008)	Fan tac for CMP22 (s/n 160478)	Fan tac for PSP (s/n 34231)	Fan tac for PIR (s/n 34309)	Fan tac for SR30 (s/n 2060)	Heat mA for SR30 (s/n 2060)
Header Actual	smp22_160002_tcomp_rad_Avg	smp22_160002_tcomp_rad_Std	smp22_160002_raw_sensor_data_Avg	smp22_160002_raw_sensor_data_Std	smp22_160002_body_DegC_Avg	smp22_160002_body_DegC_Std	smp22_160002_ext_power_sensor_Avg	sr30_2060_DegC_Avg	sr30_2060_DegC_Std	sr30_2060_Irr_Avg	sr30_2060_Irr_Std	sr30_2060_IrrC_Avg	sr30_2060_IrrC_Std	cgr4_160183_fantach_Avg	smp22_160002_fantach_Avg	sgr4_160008_fantach_Avg	cmp22_160478_fantach_Avg	psp_34231_fantach_Avg	pir_34309_fantach_Avg	sr30_2060_fantach_Avg	sr30_2060_heatA_Avg
Data Example	0	0	0	0	3	0	114	4.291	0.02046948	0.065	0.03101075	0.06516667	0.03101031	162.3333	161.7167	162.1667	162.15	199.4167	195.9	156.8789	330.4
Data Example	0	0	0	0	3	0	114	4.291167	0.01808238	0.009333333	0.04065573	0.0095	0.04088297	162.3	161.95	162.2833	162.4	199.6167	195.7333	156.8955	330.05
Data Example	0	0	0	0	3	0	114	4.299166	0.02131442	-0.04783333	0.02381118	-0.04783333	0.02381118	161.9833	161.7333	162.0667	162.15	199.2833	195.8167	156.878	330.8

Legend: Data | Diagnostics | Logger Info

Logger Box #7

File name (as of 08/19/17): dice_6_YYYYMMDD_hhmm.dat
File location on ftp server: /DICE/raw/radiation/YYYY

Header Description	Time Stamp	Record Number	Logger panel temp [deg C]	Logger battery voltage [V]	Count average [60 sec]	DW SW (s/n 34231) [mV]	DW SW (s/n 34231) std	DW SW (s/n 18135) [mV]	DW SW (s/n 18135) std	DW SW (s/n 26818) [mV]	DW SW (s/n 26818) std	DW SW (s/n 20523) [mV]	DW SW (s/n 20523) std	DW SW (s/n 26214) [mV]	DW SW (s/n 26214) std	DW SW (s/n 26236) [mV]	DW SW (s/n 26236) std	DW SW (s/n 26226) [mV]	DW SW (s/n 26226) std	DW SW (s/n 38172) [mV]	DW SW (s/n 38172) std	Fan tac for PSP (s/n 26818)	Fan tac for PSP (s/n 18135)
Header Actual	TMSTAMP	RECNBR	PTemp_Avg	batt_volt_Avg	avg_count_Tot	psp_34231_mV_Avg	psp_34231_mV_Std	psp_18135_mV_Avg	psp_18135_mV_Std	psp_26818_mV_Avg	psp_26818_mV_Std	psp_20523_mV_Avg	psp_20523_mV_Std	psp_26214_mV_Avg	psp_26214_mV_Std	psp_26236_mV_Avg	psp_26236_mV_Std	psp_26226_mV_Avg	psp_26226_mV_Std	psp_38172_mV_Avg	spp_38172_mV_Std	psp_26818_fantach_Avg	psp_18135_fantach_Avg
Data Example	8/30/2017 10:56	6398	6.004863	12.09964	60	-0.004409568	0.000227763	-0.007064367	0.000135853	-0.004794486	0.00010903	0.009402174	0.000157989	-0.006470009	7.40E-05	-0.001754771	0.000126574	-0.423136	0.196205	-5.66E-05	0.000126574	195.5833	184.9167
Data Example	8/30/2017 10:57	6399	6.005202	12.10103	60	-0.004568053	0.000168965	-0.007120955	6.10E-05	-0.004822777	0.000135853	0.009622913	0.000182545	-0.006492636	0.000186969	-0.001867977	0.000227832	-0.7171969	0.1847981	-5.66E-06	7.57E-05	195.4	184.85
Data Example	8/30/2017 10:58	6400	6.017402	12.10131	60	-0.004749188	0.000157989	-0.007375677	0.000153044	-0.004794473	0.00010903	0.009690835	0.000169438	-0.006549239	0.000153044	-0.002218929	0.000190786	-0.340213	0.163965	5.66E-06	4.35E-05	195.5833	184.95

Legend: Data | Diagnostics | Logger Info

Logger Box MET

File name (as of 08/19/17): dice_met_YYYYMMDD_hhmm.dat
File location on ftp server: /DICE/raw/radiation/YYYY

Header Description	Time Stamp	Record Number	Data Set Name	Wind speed [m/s]	Wind direction [degrees]	Max wind speed avg [m/s]	Wind direction std	Dew point temp [%]	Air temp [degC]	Logger panel temp [deg C]	Logger battery voltage [V]
Header Actual	TMSTAMP	RECNBR	Anonymous6	ws_10_avg	wd_10_vct	wg_10	wd_10_inst_Std	Va_Td_Avg	RTD_2m_Avg	Logger_Temp_Avg	Battery_Voltage_Avg
Data Example	8/30/2017 10:56	31241	BRW_D-ICE	4.8	18.9	8.4	3.234	-0.097	1.972	10.91	13.71
Data Example	8/30/2017 10:57	31242	BRW_D-ICE	5.1	17.1	6.5	2.422	-0.263	1.95	10.92	13.71
Data Example	8/30/2017 10:58	31243	BRW_D-ICE	3.6	19.7	7.7	-7999	-0.274	1.958	10.92	13.71

Legend: Data | Diagnostics | Logger Info

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Datagrams: Barrow De-Icing Comparison Experiment

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Project Lead: Sara Morris
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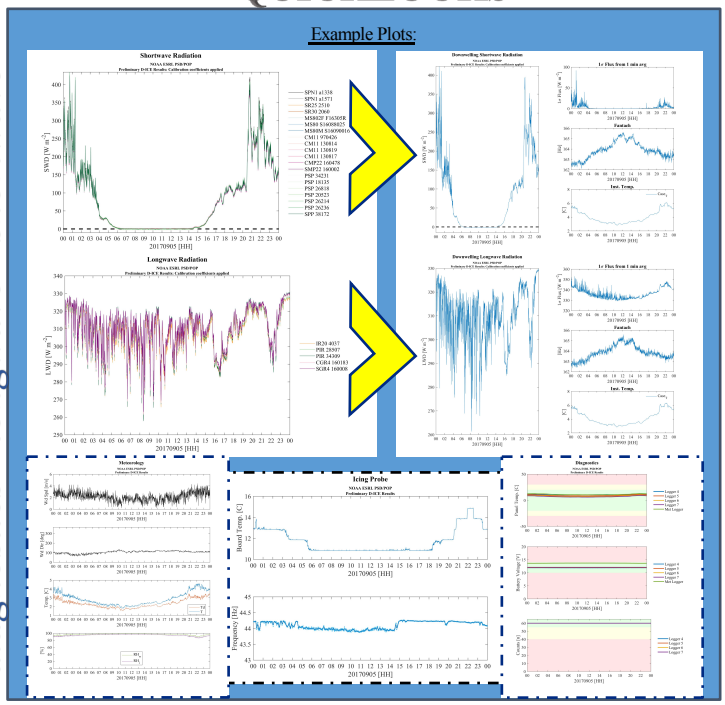
QUICKLOOKS

shortwave longwave diagnostics

Example Plots:



PROCESSING

Processing Conversions:

Shortwave Radiation (#1, #3, #4, #5, #6)

DESCRIPTION:
SW = 1000 * Recorded value / calibration coefficient

UNITS:
W/m² = 1000 * mV / µV/W/m²

Longwave Radiation (#2)

DESCRIPTION:
Sigma = 5.6704e-8, Emissivity = 1, DCF = dome correction factor, SF = calibration coefficient
A = 0.0010295
B = 0.0002391
C = 0.00000001568
LW_case = 1/(A+B*ln(T_case*1000)+C*ln(T_case*1000)³)
LW_dome = 1/(A+B*ln(T_dome*1000)+C*ln(T_dome*1000)³)
LW = SF*Recorded value+Sigma(E(LW_case⁴)+DCF((LW_case⁴)-(LW_dome⁴))

UNITS:
LW_case_mV = 1/(A+B*ln(mV*1000)+C*ln(mV*1000)³)
LW_dome_mV = 1/(A+B*ln(mV*1000)+C*ln(mV*1000)³)
W/m² = (mV/W/m²)*mV+Sigma(E(LW_case_mV⁴)+DCF ((LW_case_mV⁴)-(LW_dome_mV⁴))

Processing Quality Control Techniques:

Historical Quality Control Techniques:
Long, C. N., & Shi, Y. (2008). An Automated Quality Assessment and Control Algorithm for Surface Radiation Measurements. OASJ, 2, 23-37. doi: 10.2174/1874282300802010023

Younkin, K., & Long, C. N. (2004). Improved Correction of IR Loss in Diffuse Shortwave Measurements: An ARM Value Added Product.

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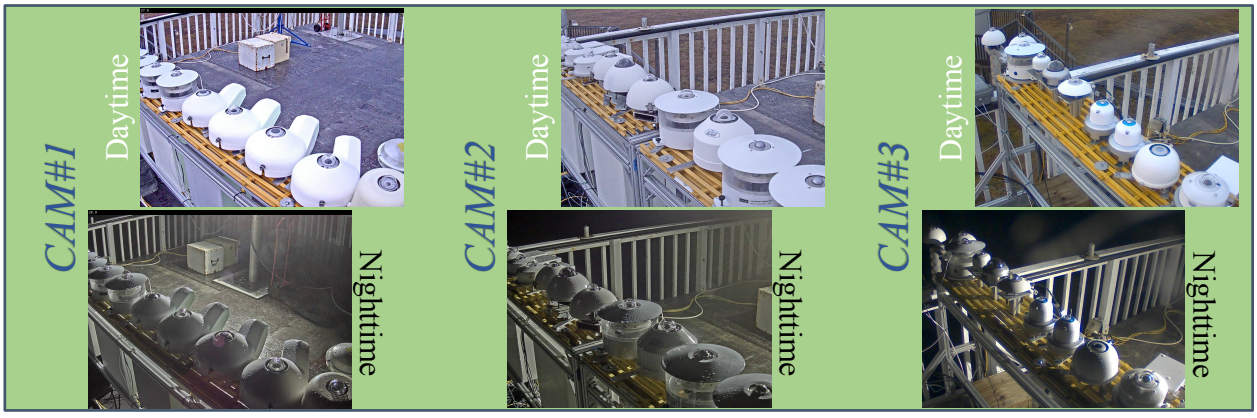
CAMERA IMAGES



D-ICE DATA

Data:

ftp://ftp1.esrl.noaa.gov/psd3/arctic/DICE/

Cox, C.: De-Icing Comparison Experiment (D-ICE) campaign data: Radiometric and icing condition observations from the NOAA Barrow Atmospheric Baseline Observatory, August 2017-July 2018 (NCEI Accession 0209059). NOAA National Centers for Environmental Information. Dataset. https://accession.nodc.noaa.gov/0209059, 2020a.

Cox, C.: De-Icing Comparison Experiment (D-ICE) campaign data: Best-estimate downwelling longwave and shortwave radiometric fluxes from the NOAA Barrow Atmospheric Baseline Observatory, August 2017-July 2018 (NCEI Accession 0209058). NOAA National Centers for Environmental Information. Dataset. https://accession.nodc.noaa.gov/0209058, 2020b.

DICEXACO images: https://doi.org/10.5439/1507148

WEBPAGE

https://www.esrl.noaa.gov/psd/arctic/d-ice/

FILE INGEST LOCATIONS

Folder Name	FTP Location
Raw	ftp://ftp1.esrl.noaa.gov/psd3/arctic/DICE/raw/
Ingest	ftp://ftp1.esrl.noaa.gov/psd3/arctic/DICE/ingest/
Products	ftp://ftp1.esrl.noaa.gov/psd3/arctic/DICE/products/
Quicklooks	ftp://ftp1.esrl.noaa.gov/psd3/arctic/DICE/quicklooks/

PRODUCT FILES

Radiometric & icing data: dice_utqiagvik_yyyymmdd.hhmmss.cdf

Best-estimate fluxes: dice_utqiagvik_best_estimate_yyyymmdd.hhmmss.cdf