



Sea-Bird Scientific
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SENSOR SERIAL NUMBER: 1391
 CALIBRATION DATE: 15-May-19

SBE 21 TEMPERATURE CALIBRATION DATA
 ITS-90 TEMPERATURE SCALE

COEFFICIENTS:

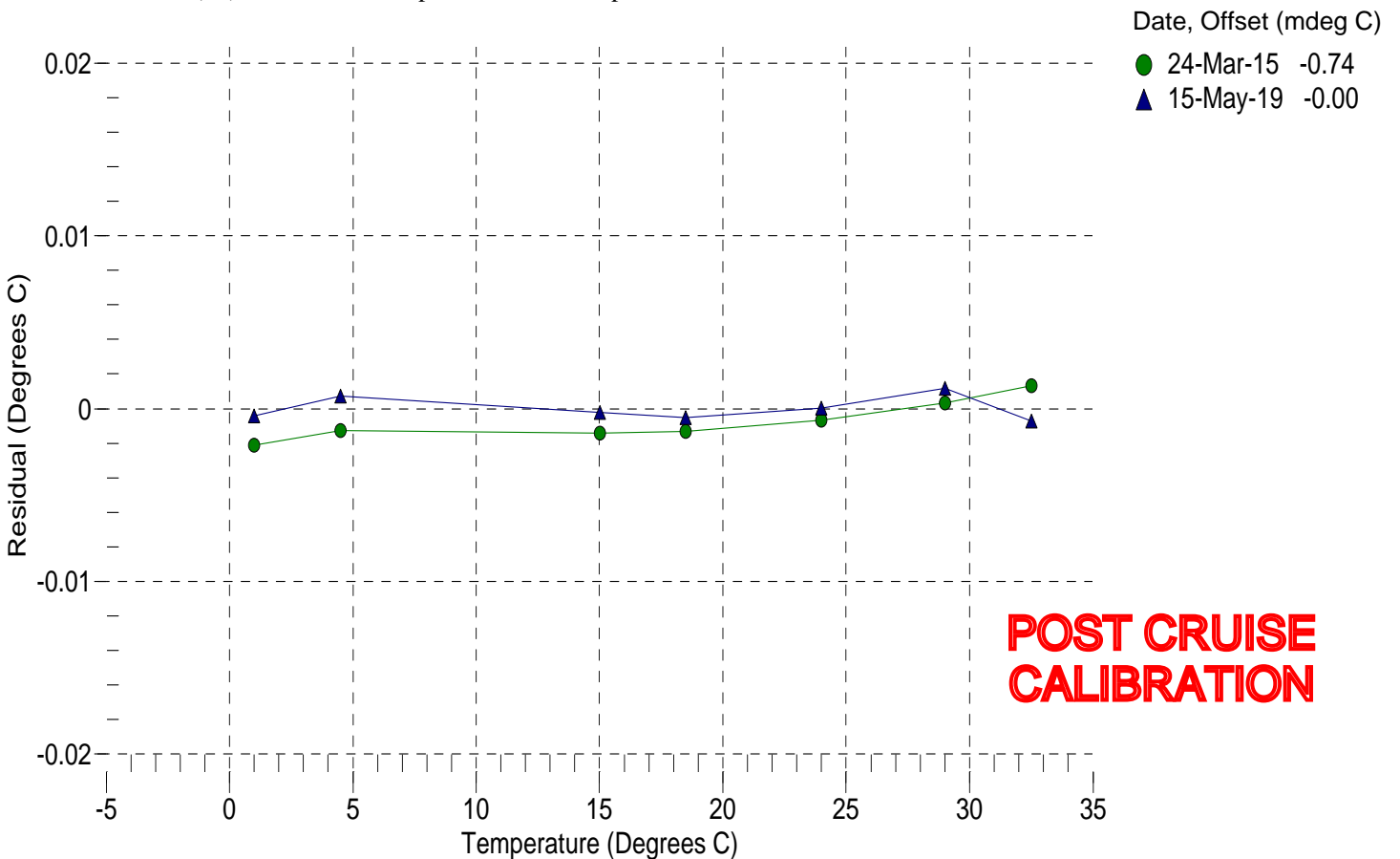
g = 4.22985670e-003
 h = 5.98400279e-004
 i = 5.25787754e-006
 j = -1.47936386e-006
 f0 = 1000.0

BATH TEMP (° C)	INSTRUMENT OUTPUT (Hz)	INST TEMP (° C)	RESIDUAL (° C)
1.0000	2674.621	0.9996	-0.00041
4.5000	2894.187	4.5007	0.00071
15.0000	3629.193	14.9998	-0.00021
18.5000	3900.965	18.4995	-0.00054
24.0000	4356.567	24.0000	0.00001
29.0000	4802.035	29.0012	0.00117
32.5000	5131.889	32.4993	-0.00073

f = Instrument Output (Hz)

$$\text{Temperature ITS-90 (°C)} = 1 / \{g + h[\ln(f_0 / f)] + i[\ln^2(f_0 / f)] + j[\ln^3(f_0 / f)]\} - 273.15$$

$$\text{Residual (°C)} = \text{instrument temperature} - \text{bath temperature}$$





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SBE 21 CONDUCTIVITY CALIBRATION DATA
 PSS 1978: C(35,15,0) = 4.2914 Siemens/meter

COEFFICIENTS:

g = -4.03844955e+000
 h = 4.80798246e-001
 i = 1.63726054e-003
 j = -5.18171167e-005

CPcor = -9.5700e-008 (nominal)
 CTcor = 3.2500e-006 (nominal)

BATH TEMP (° C)	BATH SAL (PSU)	BATH COND (S/m)	INSTRUMENT OUTPUT (kHz)	INSTRUMENT COND (S/m)	RESIDUAL (S/m)
22.0000	0.0000	0.00000	2.88533	0.00000	0.00000
1.0000	34.8666	2.97985	8.30301	2.97986	0.00001
4.5000	34.8466	3.28730	8.66960	3.28730	-0.00000
15.0000	34.8040	4.27026	9.74877	4.27027	0.00001
18.5000	34.7951	4.61586	10.10055	4.61582	-0.00004
24.0000	34.7852	5.17451	10.64466	5.17456	0.00005
29.0000	34.7791	5.69691	11.12916	5.69689	-0.00002
32.5000	34.7743	6.06949	11.46188	6.06910	-0.00040

f = Instrument Output (kHz)

t = temperature (°C); p = pressure (decibars); δ = CTcor; ϵ = CPcor;

$$\text{Conductivity (S/m)} = (g + h * f^2 + i * f^3 + j * f^4) / 10 (1 + \delta * t + \epsilon * p)$$

Residual (Siemens/meter) = instrument conductivity - bath conductivity

