

Depth sensor and altimeter calibration report

Magnetometer G-882, s/n 882### with Altimeter s/n 4807.305###

Performed by: Ivan V. Dmitriev

Date: 19th April 2019

Checking list:

The cable's mark position "1 meter" is checked	Yes
The cable's marks distance is checked	Yes
The time magnetometer was located in sea water before calibration start (20 minutes)	25 minutes
The weather description:	Calm
The plummet is used for vertical line checking	Yes
The cable was vertical at the deploy and recovery time (write angle limits for "No")	Yes

Values for depth sensor and altimeter calibration:

Depth (m)	Altitude (m)	Depth processing (units)	Altitude processing (units)
~0	~14.7		
1	13.7	160	3100
2	12.7	220	2840
4	10.7	330	2440
6	8.7	450	2040
8	6.7	570	1630
10	4.7	690	1220
12	2.7	820	800
14	0.7	940	370
~14.7	~0		
14	0.7	930	400
12	2.7	810	800
10	4.7	690	1210
8	6.7	575	1600
6	8.7	455	2000
4	10.7	335	2420
2	12.7	210	2850
1	13.7	150	3050
~0	~14.7		

Calculated calibration coefficients:

Depth sensor: Scale 0.01667; Bias -1.56.

Altimeter: Scale 0.00486; Bias -1.17.

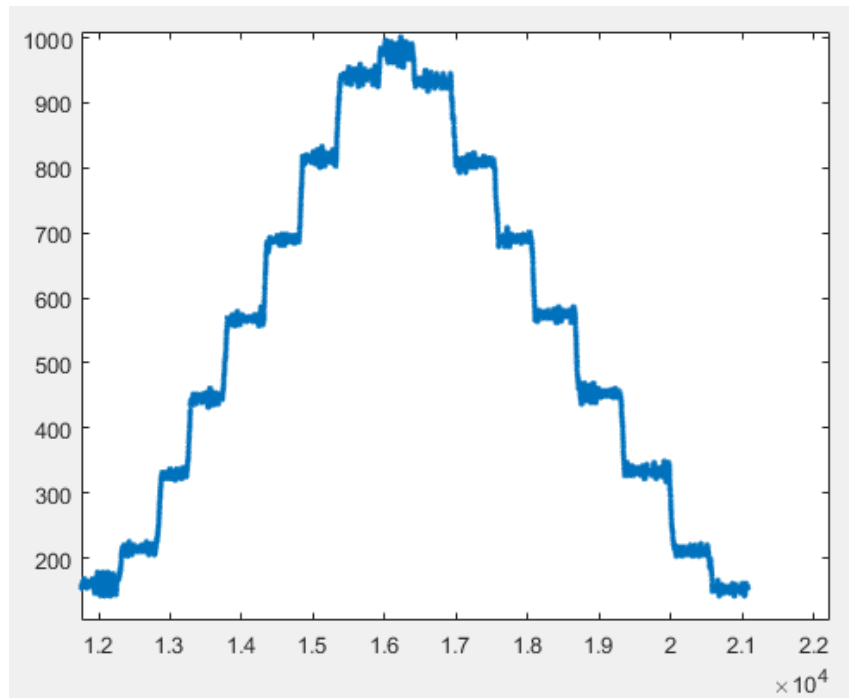


Figure 1. Depth sensor record

Vertical axis is units; horizontal axis is measurement number for 10Hz frequency.

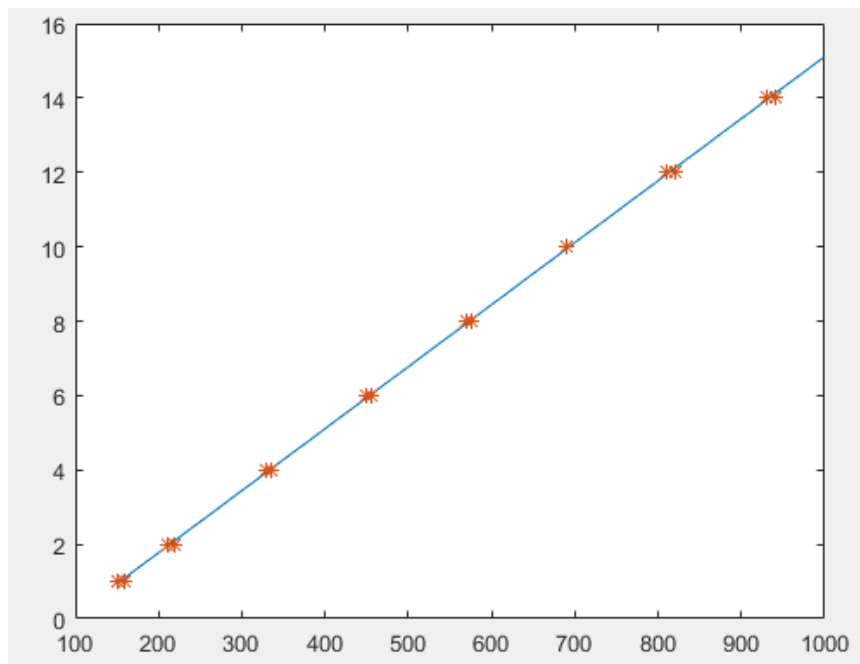


Figure 2. Linear regression for depth sensor's data

Vertical axis is meters; horizontal axis is units.

Scale: 0.0166730487351582.

Bias: -1.56061632547147.

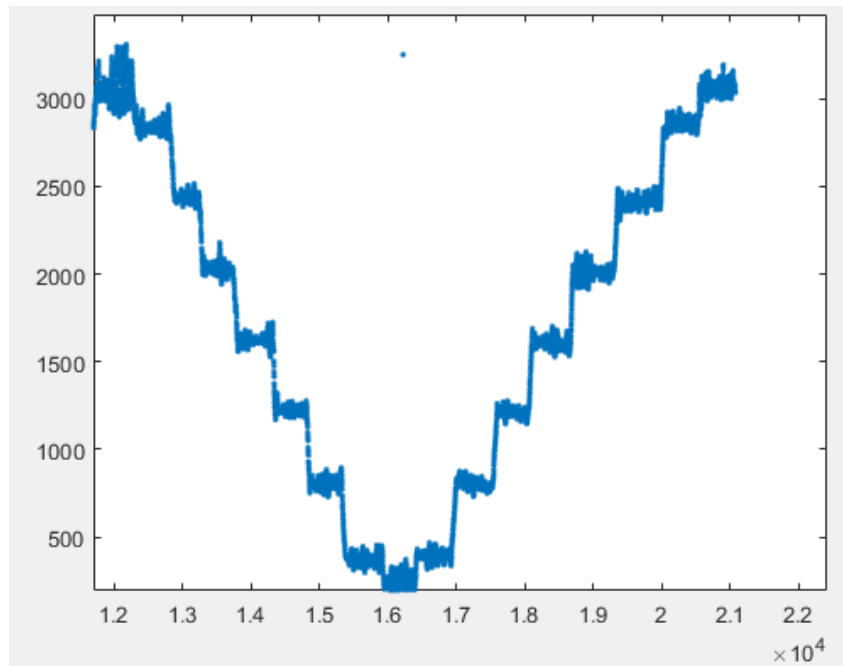


Figure 3. Altimeter record

Vertical axis is units; horizontal axis is measurement number for 10Hz frequency.

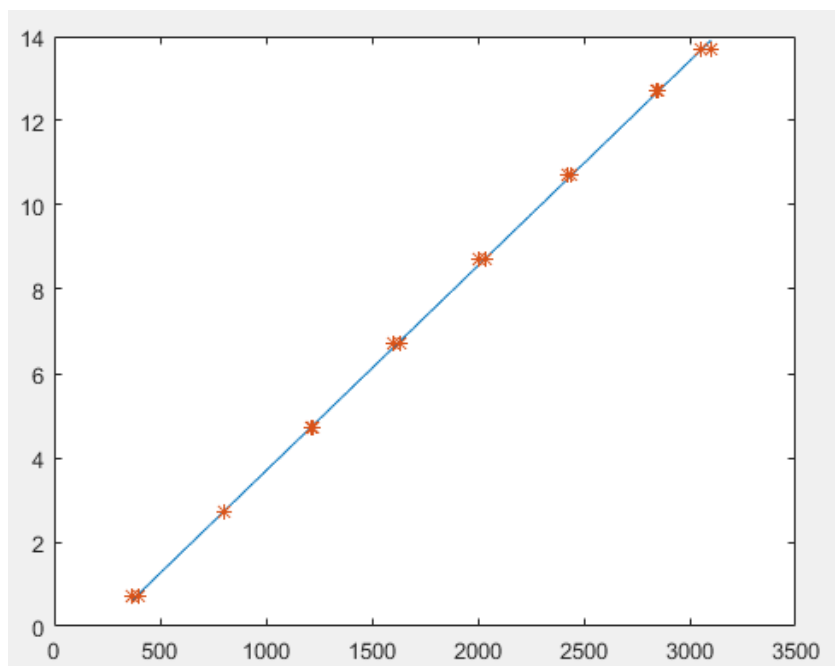


Figure 4. Linear regression for altimeter's data

Vertical axis is units; horizontal axis is measurement number for 10Hz frequency.

Scale: 0.00486428942928059.

Bias: -1.17160043002516.

MatLab commands:

`p=polyfit(a(:,2),a(:,1),1);` % a(:,1) is value in meters, a(:,2) is value in units

`x=min(a(:,2)):1:max(a(:,2));y=x*p(1)+p(2);plot(x,y);hold on;plot(a(:,2),a(:,1),'*');` %create figures