

Deal Pier Tide Gauge

Location

OS: 638145E 152700N
 WGS84 *Latitude:* 51° 13.427' N *Longitude:* 001° 24.550' E

Seaward end of Deal Pier, lower deck

Instrument

Rosemount WaveRadar Rex



Benchmarks

<i>Benchmark</i>	<i>Description</i>
TGBM = 3.893 OD	Top corner of NE leg of frame baseplate
Aux1 = 3.813 OD	Top of bolt

TGZ = 6.986m above Ordnance Datum Newlyn
 TGZ = 10.386m above Admiralty Chart Datum
 TGZ = 3.093m above TGBM

Datum information

All data are to Ordnance Datum Newlyn. The height of Chart Datum relative to Ordnance Datum at Deal is -3.40m (Admiralty Tide Tables, Supplementary Table III).

Survey information

The site was last surveyed on 25 August 2005.

Site characteristics

The Pier is on open coast, with no nearby estuaries. Spring tidal range is 5.4m. Some wave reflection from the Pier legs can occur.

Service history

The radar was serviced on 28 January 2009. No re-calibration of the instrument is required. Mains power to the Rex was cut off for periods during 2008 due to the refurbishment of the Pier.

Data Quality

C1(%)	Sample interval	Missing days
92	10 minutes	29 Feb, 01-04 Mar, 11-12 Mar, 03 Apr, 19-22 Apr, 01 May, 21-26 Jun, 01 Jul, 01 Oct, 01 Dec

Residuals and Elevations

Residuals and Elevations (OD and CD) for the whole year are shown in Figures 1 to 3 respectively. Tidal elevations are derived as the one minute average of the 4Hz readings. The time stamp is the start of the measuring burst.

Statistics

All times GMT

Month	Surge maxima		Surge minima	
	Value (m)	Date/Time	Value (m)	Date/Time
January	0.76	16-Jan-2008 14:40	-1.25	31-Jan-2008 14:30
February	1.03	02-Feb-2008 01:10	-0.68	23-Feb-2008 22:30
March	0.84	21-Mar-2008 10:00	-0.69	28-Mar-2008 17:10
April	0.45	02-Apr-2008 06:30	-0.61	01-Apr-2008 15:00
May	0.30	27-May-2008 01:30	-0.38	08-May-2008 10:40
June	0.26	19-Jun-2008 22:20	-0.45	09-Jun-2008 13:10
July	0.52	21-Jul-2008 09:10	-0.32	24-Jul-2008 02:40
August	0.44	10-Aug-2008 15:10	-0.36	30-Aug-2008 08:20
September	0.41	30-Sep-2008 07:50	-0.51	26-Sep-2008 18:30
October	0.85	05-Oct-2008 11:50	-0.73	25-Oct-2008 21:20
November	1.15	21-Nov-2008 12:20	-0.48	08-Nov-2008 15:40
December	0.98	20-Dec-2008 15:50	-1.29	13-Dec-2008 11:00

Month	Extreme maxima		Extreme minima	
	Elevation (OD)	Date/Time	Elevation (OD)	Date/Time
January	3.18	25-Jan-2008 00:40	-2.84	25-Jan-2008 08:20
February	3.28	23-Feb-2008 00:30	-2.75	11-Feb-2008 09:00
March	3.28	21-Mar-2008 11:20	-2.81	23-Mar-2008 07:10
April	3.13	05-Apr-2008 22:50	-3.00	08-Apr-2008 07:30
May	2.93	06-May-2008 23:40	-2.82	06-May-2008 06:40
June	2.83	05-Jun-2008 12:00	-2.59	05-Jun-2008 19:20
July	3.09	21-Jul-2008 13:00	-2.62	05-Jul-2008 20:10
August	3.08	04-Aug-2008 13:00	-2.78	03-Aug-2008 20:00
September	3.12	30-Sep-2008 11:30	-2.83	01-Sep-2008 19:30
October	3.34	16-Oct-2008 11:50	-2.60	17-Oct-2008 20:00
November	3.07	16-Nov-2008 00:30	-2.65	13-Nov-2008 18:10
December	2.83	15-Dec-2008 00:30	-3.12	13-Dec-2008 06:20

Month	Mean Sea Level	
	No. of days	MSL (OD)
January	30	0.146
February	28	0.113
March	23	0.226
April	25	0.111
May	30	0.109
June	24	0.152
July	30	0.163
August	31	0.171
September	30	0.141
October	30	0.241
November	30	0.239
December	30	0.084

10 Highest Values in 2008			
Surge		Extreme	
Value (m)	Date/Time	Elevation (OD) (surge component)	Date/Time
1.15	21-Nov-2008 12:20	3.34 (0.25)	16-Oct-2008 11:50
1.08	22-Nov-2008 00:50	3.28 (0.43)	23-Feb-2008 00:30
1.03	02-Feb-2008 01:10	3.28 (0.64)	21-Mar-2008 11:20
1.00	02-Feb-2008 02:00	3.23 (0.48)	21-Mar-2008 23:30
0.98	20-Dec-2008 15:50	3.17 (0.24)	17-Oct-2008 00:10
0.85	05-Oct-2008 11:50	3.17 (0.46)	22-Mar-2008 11:50
0.84	21-Mar-2008 10:00	3.16 (0.05)	17-Oct-2008 12:20
0.83	20-Dec-2008 14:00	3.15 (-0.03)	10-Mar-2008 00:20
0.78	22-Nov-2008 07:10	3.14 (0.36)	25-Jan-2008 00:40
0.78	03-Oct-2008 18:50	3.13 (0.17)	05-Apr-2008 22:50

Year	Annual surge maxima		Annual extreme maxima		Annual Mean Sea Level (OD)	Recovery rate (C1)
	Value (m)	Date	Elevation (OD) (surge component)	Date		
2006	1.596	31-Oct-2006 22:10	3.58 (0.33)	07-Oct-2006 10:50	0.151	98%
2007	1.873	09-Nov-2007 06:00	3.83 (1.26)	09-Nov-2007 10:40	0.180	97%
2008	1.149	21-Nov-2008 12:20	3.34 (0.25)	16-Oct-2008 11:50	0.158	92%

General

The time series of 10 minute tidal elevations for one year is quality-checked in accordance with ESEAS guidelines, flagged and archived. The archived time series is continuous and monotonic, with missing data given as 9999. The missing data shown are days where the entire 24 hours of data are missing.

Monthly **extreme maxima/minima** are the maximum and minimum water levels from all measured data for that month. Monthly **surge maxima/minima** (residuals) are calculated in a similar manner from the time series of residuals. Residuals are derived as the measured tidal elevation minus the predicted tidal elevation.

Tidal predictions were produced using TASK2000. The monthly Mean Sea Level is calculated as the average of all readings for the given month. The annual MSL is the average of all readings for the given year. These average values should not be used for any purpose without consideration of the recovery rate.

Acknowledgements

Tidal predictions were produced using the TASK2000 software, kindly provided by the Permanent Service for Mean Sea Level (PSMSL), Proudman Oceanographic Laboratory.

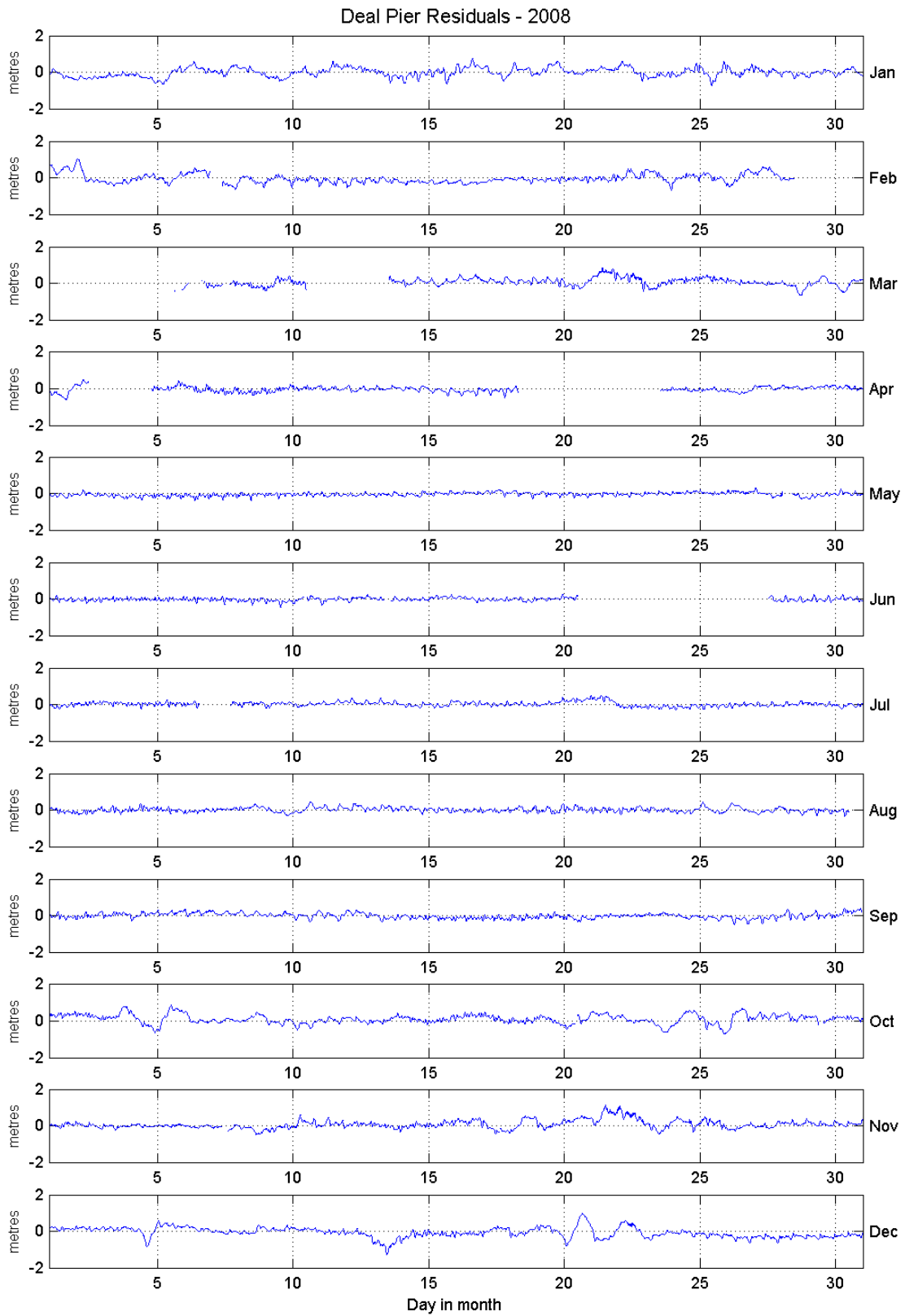


Figure 1: Residuals for 2008

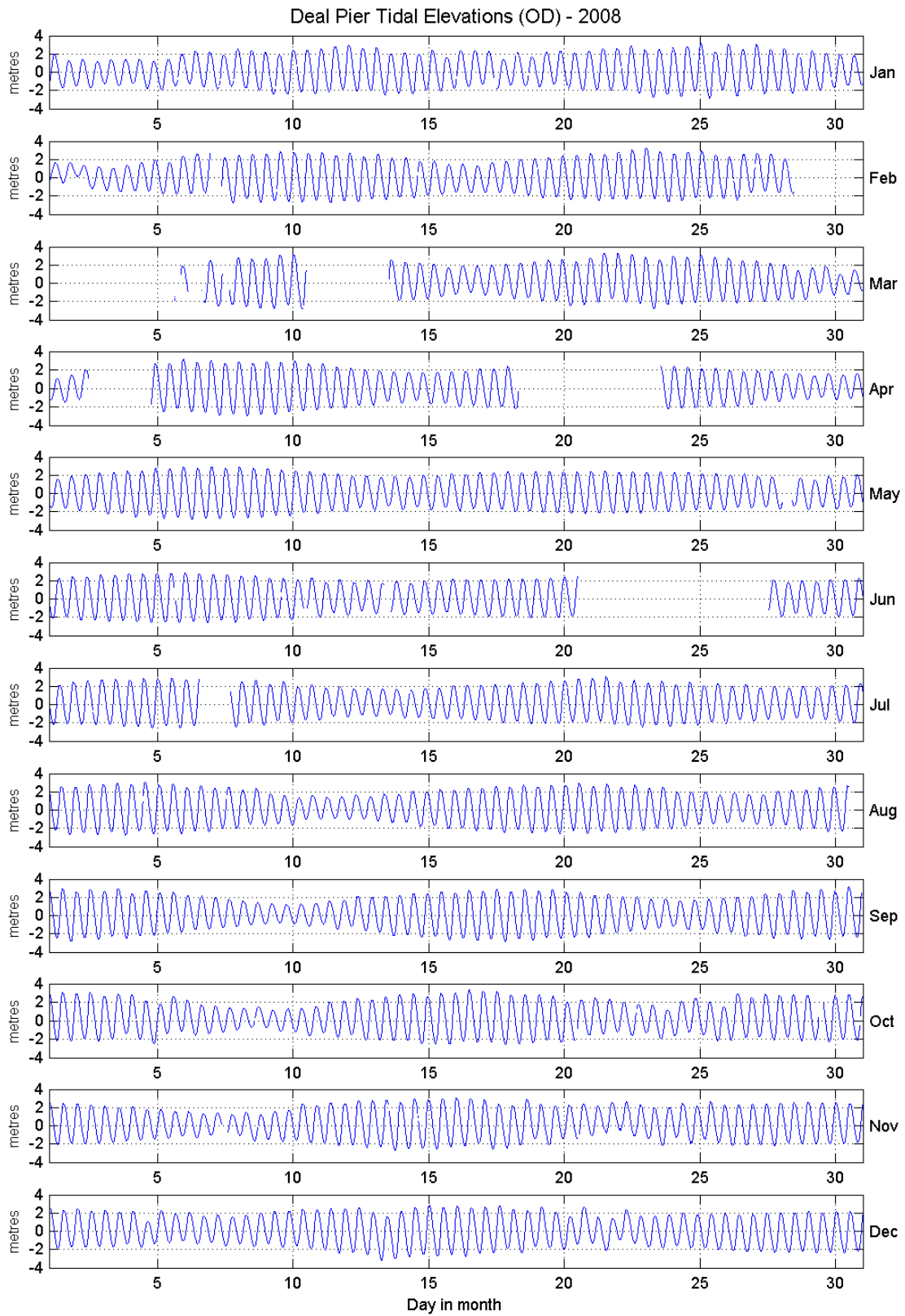


Figure 2 Tidal elevations relative to Ordnance Datum for 2008

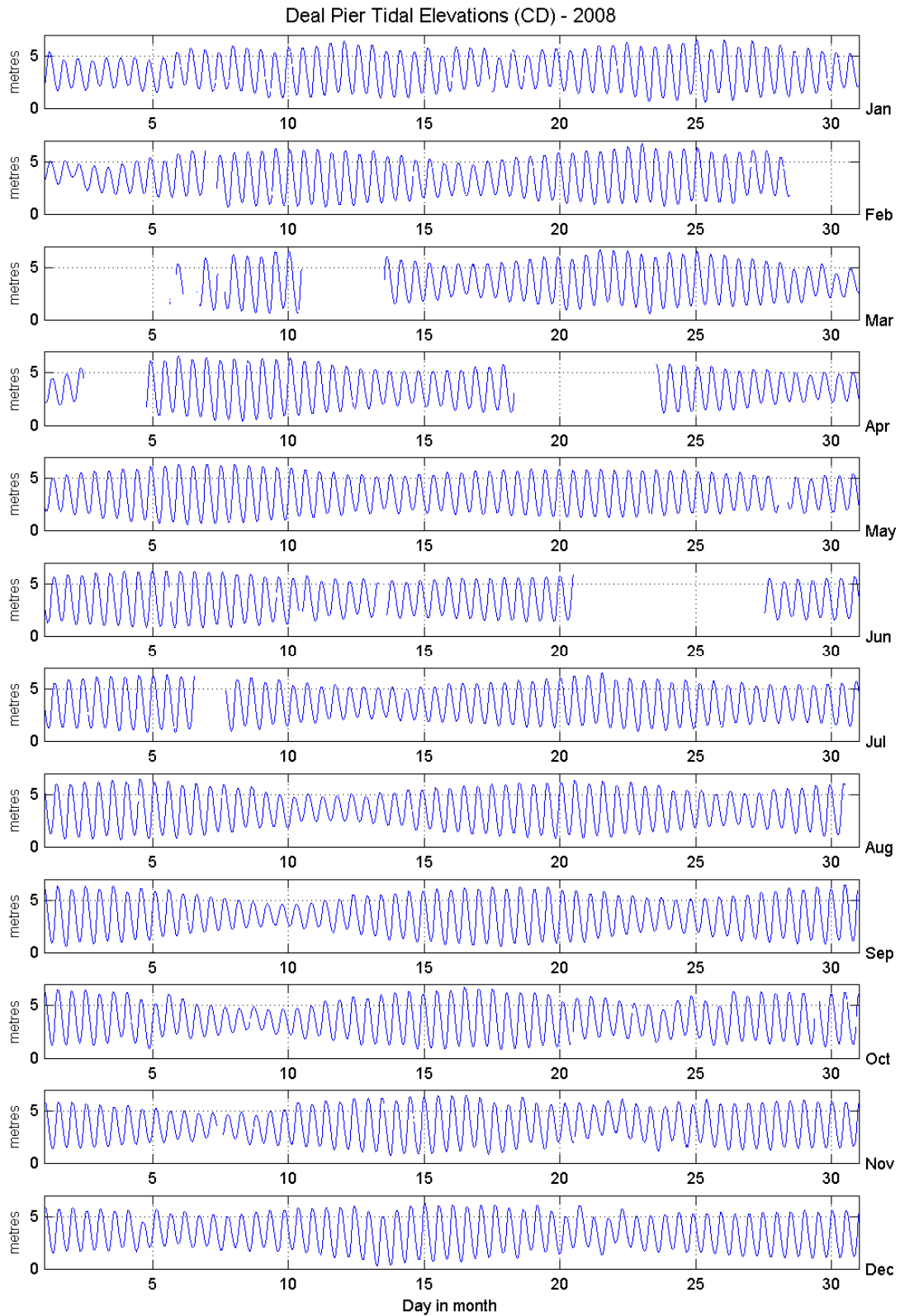


Figure 3 Tidal elevations relative to Chart Datum for 2008