

Teignmouth Pier Tide Gauge

Location

OS: 294370E 72631N

WGS84: *Latitude:* 50° 32' 37.904" N *Longitude:* 03° 29' 31.720" W

Instrument Type

Rosemount WaveRadar REX

TGZ



Benchmarks

Benchmark

TGBM = 6.613 above Ordnance Datum Newlyn

TGZ = 6.688m above Ordnance Datum Newlyn

TGZ = 9.338m above Chart Datum

TGZ = 0.075m above TGBM

Description

Top of S/S horizontal frame bar

Datum

All data are to Ordnance Datum Newlyn. The height of Chart Datum relative to Ordnance Datum at Teignmouth Approaches is -2.65m (Admiralty Tide Tables, Supplementary Table III).

Survey information

The site was surveyed on 29 May 2008.

Site characteristics

The Pier is on open coast. Spring tidal range is 3.7m.

Data Quality

Recovery rate (%)	Sample interval
99	10 minutes

Service history

The radar was deployed in July 2008. No re-calibration of the instrument is required.

Measurements

Residuals and Elevations (OD and CD) for the whole year are shown in Figures 1 to 3 respectively.

Statistics*All times GMT*

Month	Extreme maxima		Extreme minima	
	Elevation (OD)	Date/Time	Elevation (OD)	Date/Time
January	2.53	03-Jan-2010 08:10	-2.22	31-Jan-2010 12:40
February	2.61	28-Feb-2010 06:10	-2.36	02-Feb-2010 02:00
March	2.70	30-Mar-2010 06:40	-2.48	02-Mar-2010 13:10
April	2.39	02-Apr-2010 08:10	-2.27	01-Apr-2010 01:10
May	2.07	29-May-2010 19:10	-1.91	01-May-2010 01:10
June	2.11	13-Jun-2010 19:00	-1.95	16-Jun-2010 02:10
July	2.63	14-Jul-2010 20:10	-1.94	15-Jul-2010 14:30
August	2.45	11-Aug-2010 19:30	-2.42	12-Aug-2010 01:10
September	2.62	10-Sep-2010 19:50	-2.39	10-Sep-2010 00:50
October	2.68	08-Oct-2010 18:30	-2.12	09-Oct-2010 00:30
November	2.50	08-Nov-2010 07:10	-2.12	07-Nov-2010 00:10
December	2.28	06-Dec-2010 06:20	-2.02	24-Dec-2010 13:50

Month	Surge maxima		Surge minima	
	Value (m)	Date/Time	Value (m)	Date/Time
January	0.59	16-Jan-2010 03:20	-0.40	08-Jan-2010 22:10
February	0.75	23-Feb-2010 06:40	-0.34	11-Feb-2010 23:20
March	0.48	30-Mar-2010 01:10	-0.43	08-Mar-2010 10:10
April	0.37	02-Apr-2010 13:10	-0.47	12-Apr-2010 11:00
May	0.23	26-May-2010 09:00	-0.38	22-May-2010 19:40
June	0.33	11-Jun-2010 12:20	-0.29	02-Jun-2010 19:30
July	0.43	15-Jul-2010 01:10	-0.26	05-Jul-2010 05:30
August	0.39	25-Aug-2010 14:00	-0.26	13-Aug-2010 14:30
September	0.35	16-Sep-2010 06:40	-0.24	12-Sep-2010 14:50
October	0.56	30-Oct-2010 22:00	-0.25	17-Oct-2010 18:10
November	0.69	08-Nov-2010 04:20	-0.22	02-Nov-2010 08:00
December	0.49	16-Dec-2010 21:10	-0.36	29-Dec-2010 10:10

Month	Mean Level	
	No. of days	Elevation (OD)
January	31	0.208
February	28	0.311
March	31	0.191
April	30	0.110
May	31	0.134
June	30	0.169
July	31	0.181
August	31	0.211
September	30	0.242
October	31	0.319
November	30	0.338
December	31	0.224

Highest values in 2010			
Extreme		Surge	
Elevation (OD) (Surge component)	Date/Time	Value (m)	Date/Time
2.70 (0.26)	30-Mar-2010 06:40	0.75	23-Feb-2010 06:40
2.68 (0.17)	08-Oct-2010 18:30	0.74	22-Feb-2010 05:40
2.63 (0.07)	01-Mar-2010 07:00	0.71	23-Feb-2010 06:10
2.63 (0.22)	14-Jul-2010 20:10	0.71	22-Feb-2010 05:50
2.62 (0.01)	10-Sep-2010 19:50	0.69	08-Nov-2010 04:20
2.61 (0.30)	28-Feb-2010 06:10	0.66	17-Nov-2010 03:30
2.60 (0.20)	09-Oct-2010 19:40	0.65	23-Feb-2010 20:00
2.60 (0.28)	15-Jul-2010 21:00	0.64	11-Nov-2010 04:30
2.58 (-0.02)	02-Mar-2010 08:00	0.63	27-Feb-2010 12:10
2.57 (-0.02)	03-Mar-2010 08:00	0.62	11-Nov-2010 04:50

Year	Annual extreme maxima		Annual surge maxima		Z ₀ (OD)	Annual recovery rate
	Elevation (OD) (Surge)	Date/Time	Value (m)	Date/Time		
2008	2.56 (0.24)	04-Jul-2008 19:10	0.65	04-Dec-2008 05:20	-	95%
2009	2.56 (0.39)	09-Feb-2009 18:30	0.80	13-Nov-2009 19:20	0.284	75%
2010	2.70 (0.26)	30-Mar-2010 06:40	0.75	23-Feb-2010 06:40	-	99%

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.

The monthly Mean Level is calculated as the average of all readings for the given month. The annual Z_0 is the value of Mean Sea Level derived by the harmonic analysis of the year's data. These values should not be used for any purpose without consideration of the recovery rate.

Acknowledgement

Tidal predictions were produced using the TASK2000 software, kindly provided by the Permanent Service for Mean Sea Level (PSMSL), Proudman Oceanographic Laboratory. Tide levels were produced by EMU Limited. The REX is mounted on Teignmouth Pier by kind permission of the Pier owners.

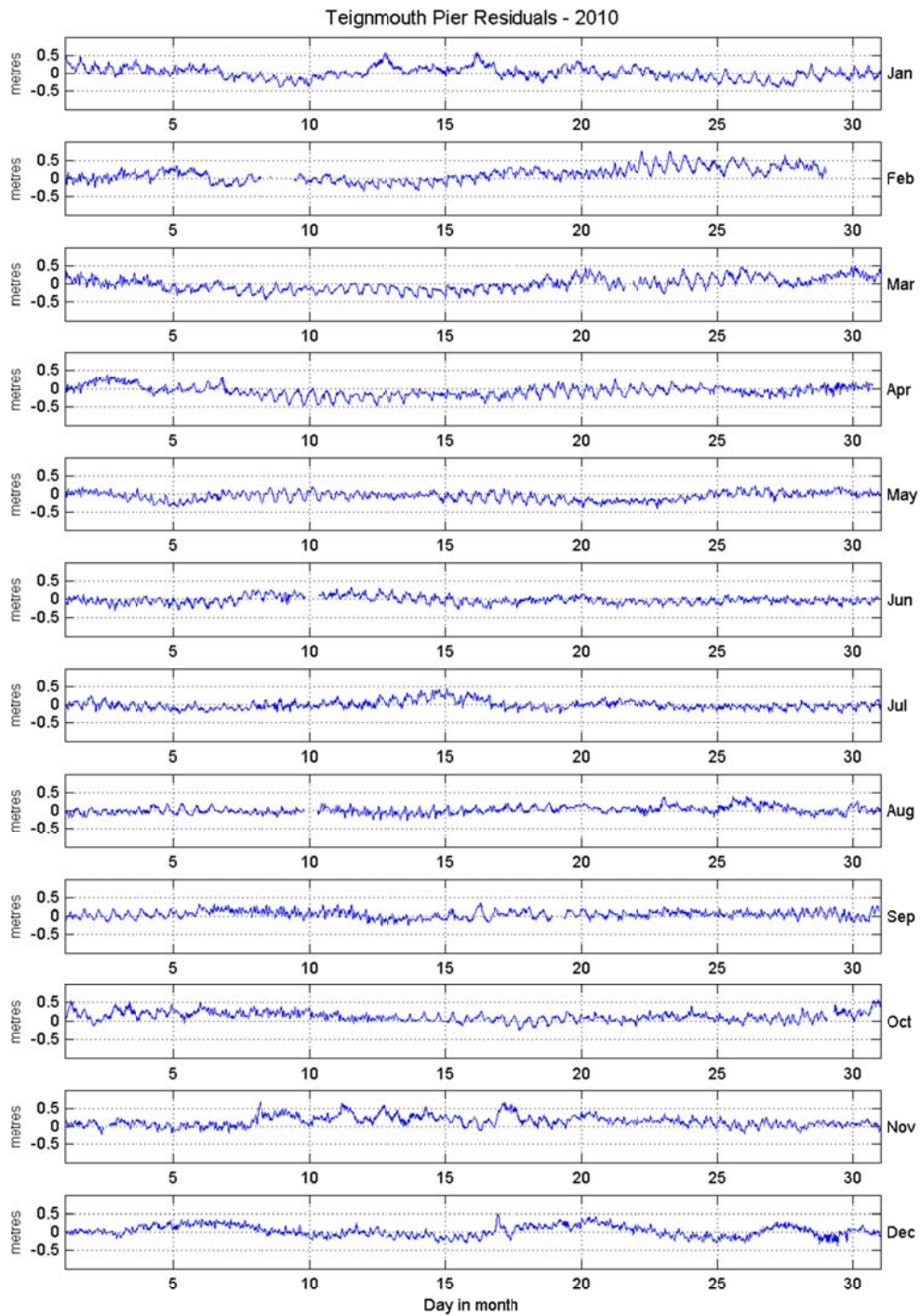


Figure 1: Teignmouth Pier residuals for 2010

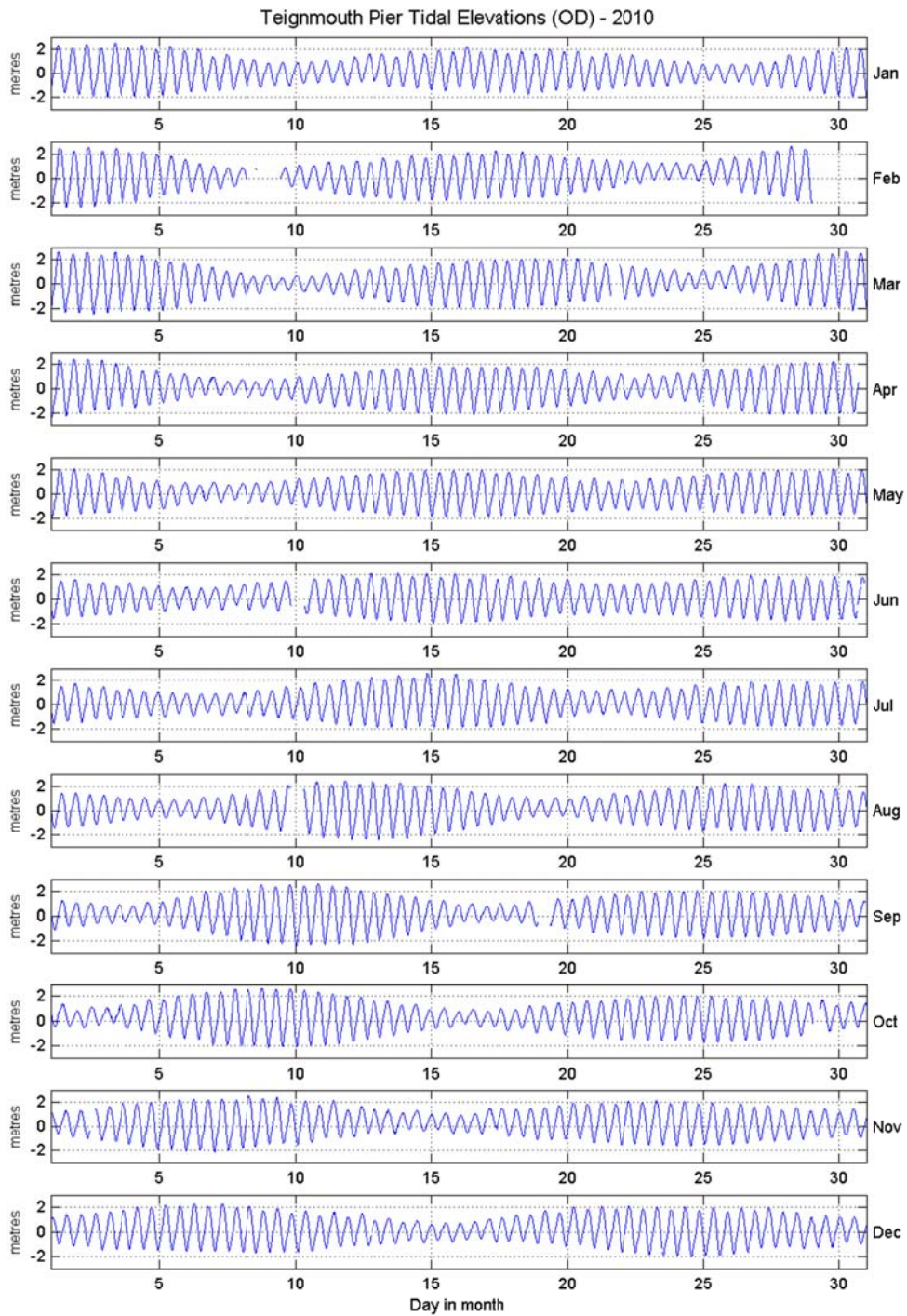


Figure 2: Teignmouth Pier tidal elevations for 2010 relative to Ordnance Datum

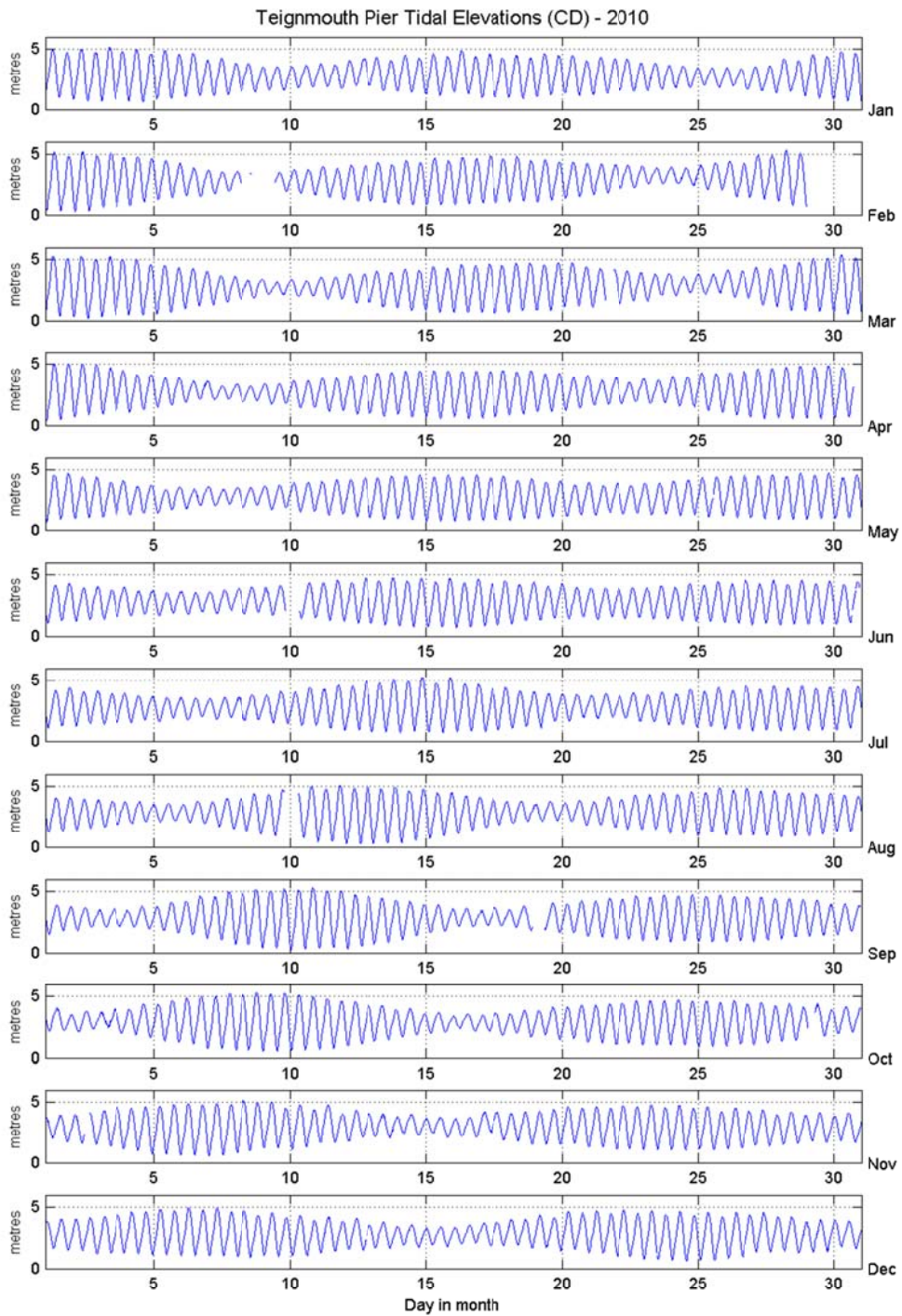


Figure 3: Teignmouth Pier tidal elevations for 2010 relative to Chart Datum