

## Sandown Pier Tide Gauge

### Location

OS: 459964E 83835N  
 WGS84: Latitude: 50° 39.0666' N Longitude: 01° 9.18960' W

### Instrument Type

Rosemount WaveRadar REX



### Benchmarks

#### Benchmark

TGBM = 5.989m above Ordnance Datum Newlyn

TGZ = 8.112m above Ordnance Datum Newlyn

TGZ = 10.552m above Chart Datum

TGZ = 2.123m above TGBM

#### Description

Top of NW bolt

### Datum

All data are to Ordnance Datum Newlyn. The height of Chart Datum relative to Ordnance Datum at Sandown is -2.44m (Admiralty Tide Tables, Supplementary Table III).

### Survey information

The site was surveyed on 09 May 2006.

### Site characteristics

The Pier is on open coast, with no nearby estuaries. Some wave damping from the outer pier arm (see photograph) and some reflection from the Pier legs can occur. Spring tidal range is 3.3m.

### Data Quality

Recovery rate (%)	Sample interval
93	10 minutes

### Service history

The radar was last serviced in September 2015. 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	2.23	24-Jan-2015 14:00	-1.93	22-Jan-2015 17:40
February	2.36	23-Feb-2015 15:00	-1.91	20-Feb-2015 17:30
March	2.24	24-Mar-2015 01:40	-2.07	22-Mar-2015 17:50
April	2.13	19-Apr-2015 23:50	-1.97	18-Apr-2015 16:10
May	2.26	05-May-2015 11:50	-1.63	20-May-2015 05:30
June	1.97	18-Jun-2015 12:20	-1.60	17-Jun-2015 04:50
July	2.02	04-Jul-2015 00:10	-1.57	03-Jul-2015 05:00
August	2.32	31-Aug-2015 12:10	-1.66	03-Aug-2015 06:20
September	2.32	01-Sep-2015 00:30	-2.07	29-Sep-2015 04:40
October	2.48	28-Oct-2015 11:30	-1.86	01-Oct-2015 06:10
November	2.30	30-Nov-2015 02:30	-1.78	26-Nov-2015 16:20
December	2.40	25-Dec-2015 10:50	-1.44	27-Dec-2015 17:50

Month	Surge maxima		Surge minima	
	Value (m)	Date/Time	Value (m)	Date/Time
January	0.69	13-Jan-2015 03:40	-0.46	10-Jan-2015 14:50
February	0.61	23-Feb-2015 19:00	-0.63	07-Feb-2015 00:20
March	0.50	29-Mar-2015 11:40	-0.47	10-Mar-2015 02:20
April	0.29	13-Apr-2015 05:40	-0.34	18-Apr-2015 11:20
May	0.49	05-May-2015 06:20	-0.28	21-May-2015 14:10
June	0.22	02-Jun-2015 02:30	-0.35	10-Jun-2015 09:50
July	0.33	26-Jul-2015 13:30	-0.20	15-Jul-2015 16:40
August	0.38	25-Aug-2015 13:20	-0.19	12-Aug-2015 10:20
September	0.36	16-Sep-2015 14:30	-0.41	30-Sep-2015 00:50
October	0.39	23-Oct-2015 01:10	-0.30	02-Oct-2015 02:20
November	0.59	19-Nov-2015 17:30	-0.34	07-Nov-2015 23:00
December	0.49	31-Dec-2015 07:40	-0.36	04-Dec-2015 06:50

Month	Mean Level	
	No. of days	Elevation (OD)
January	31	0.333
February	28	0.265
March	31	0.207
April	30	0.214
May	31	0.316
June	30	0.259
July	31	0.331
August	31	0.382
September	30	0.369
October	31	0.388
November	30	0.434
December	31	0.439

Highest values in 2015			
Extreme		Surge	
Elevation (OD) (Surge component)	Date/Time	Value (m)	Date/Time
2.48 (0.15)	28-Oct-2015 11:30	0.69	13-Jan-2015 03:40
2.45 (0.18)	29-Oct-2015 12:00	0.66	15-Jan-2015 02:50
2.44 (0.19)	27-Oct-2015 10:30	0.61	23-Feb-2015 19:00
2.41 (0.21)	27-Oct-2015 23:00	0.59	19-Nov-2015 17:30
2.40 (0.28)	25-Dec-2015 10:50	0.57	14-Jan-2015 23:40
2.39 (0.15)	28-Oct-2015 23:50	0.56	17-Nov-2015 01:20
2.36 (0.19)	30-Oct-2015 12:40	0.56	11-Jan-2015 04:00
2.36 (0.34)	23-Feb-2015 15:00	0.50	29-Mar-2015 11:40
2.34 (0.10)	21-Feb-2015 00:50	0.50	17-Nov-2015 19:30
2.33 (0.18)	20-Feb-2015 12:10	0.49	05-May-2015 06:20

Year	Annual extreme maxima		Annual surge maxima		Z <sub>0</sub> (OD)	Annual recovery rate
	Elevation (OD) (Surge)	Date/Time	Value (m)	Date/Time		
2007	2.54 (0.50)	18-Mar-2007 22:50	0.78	09-Nov-2007 05:50	0.303	97%
2008	2.53 (0.52)	10-Mar-2008 12:30	0.88	10-Mar-2008 06:30	0.302	94%
2009	2.55 (0.47)	09-Feb-2009 23:30	0.73	23-Jan-2009 07:50	0.314	99%
2010	2.48 (0.24)	30-Mar-2010 23:50	0.63	16-Dec-2010 19:30	0.316	99%
2011	2.48 (0.33)	27-Oct-2011 11:00	0.63	16-Dec-2011 07:20	0.298	98%
2012	2.61 (0.46)	17-Oct-2012 12:10	0.73	17-Oct-2012 04:10	0.310	95%
2013	2.86 (0.85)	06-Dec-2013 02:10	0.88	06-Dec-2013 02:50	0.315	97%
2014	2.67 (0.91)	14-Feb-2014 23:10	1.00	14-Feb-2014 21:30	-	90%
2015	2.48 (0.15)	28-Oct-2015 11:30	0.69	13-Jan-2015 03:40	-	93%

Tidal levels		
Observation period	June 2006 to December 2012	
Tide Level	Elevation (OD)	Elevation (CD)
HAT	2.36	4.80
MHWS	1.96	4.40
MHWN	1.18	3.62
MSL	0.31	2.75
MLWN	-0.55	1.89
MLWS	-1.34	1.10
LAT	-1.99	0.45

## 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<sub>0</sub> 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.

## Acknowledgements

Tide levels were produced by Fugro EMU Limited. The REX is mounted on Sandown Pier by kind permission of the Pier owners.

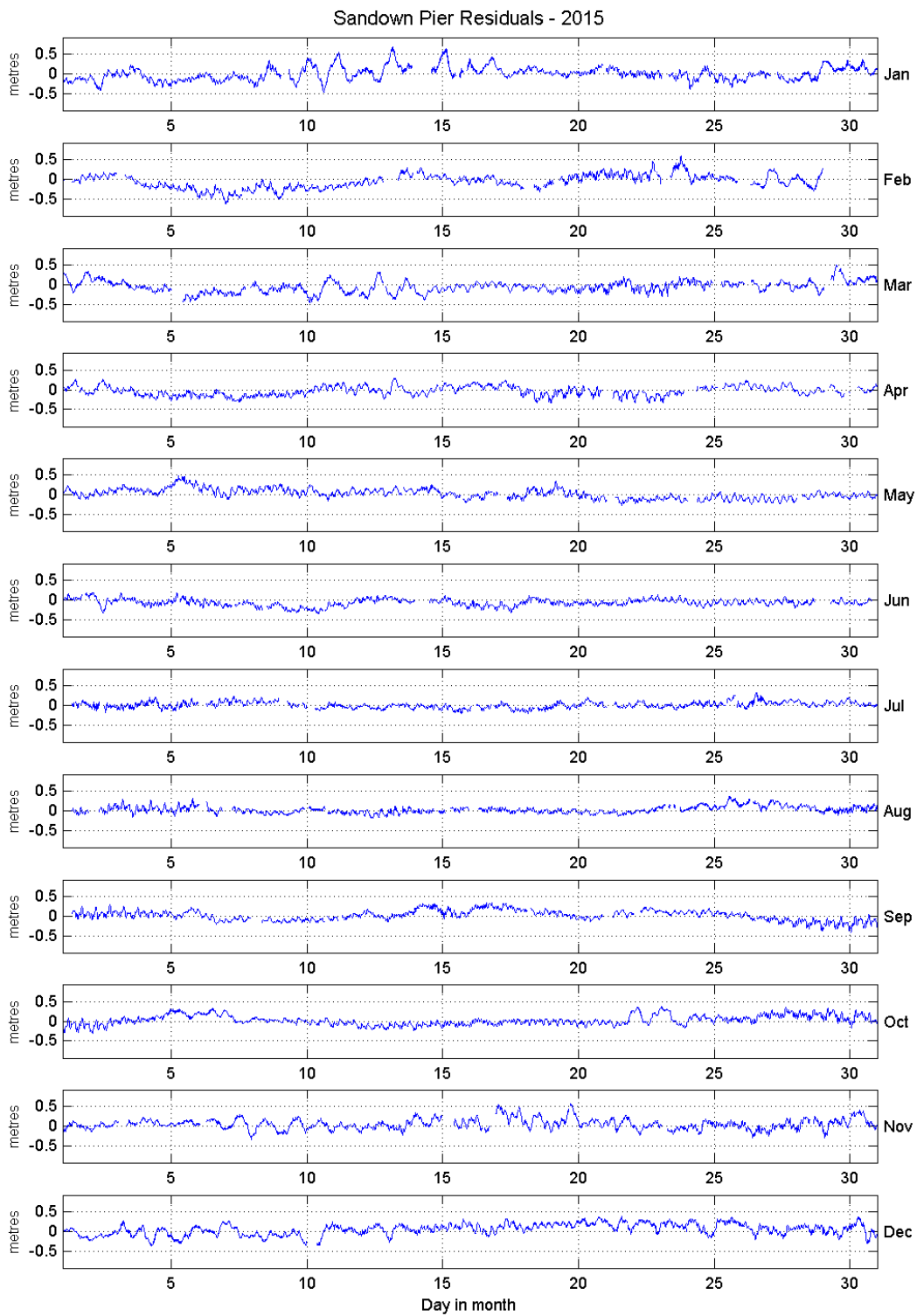


Figure 1: Sandown Pier residuals for 2015

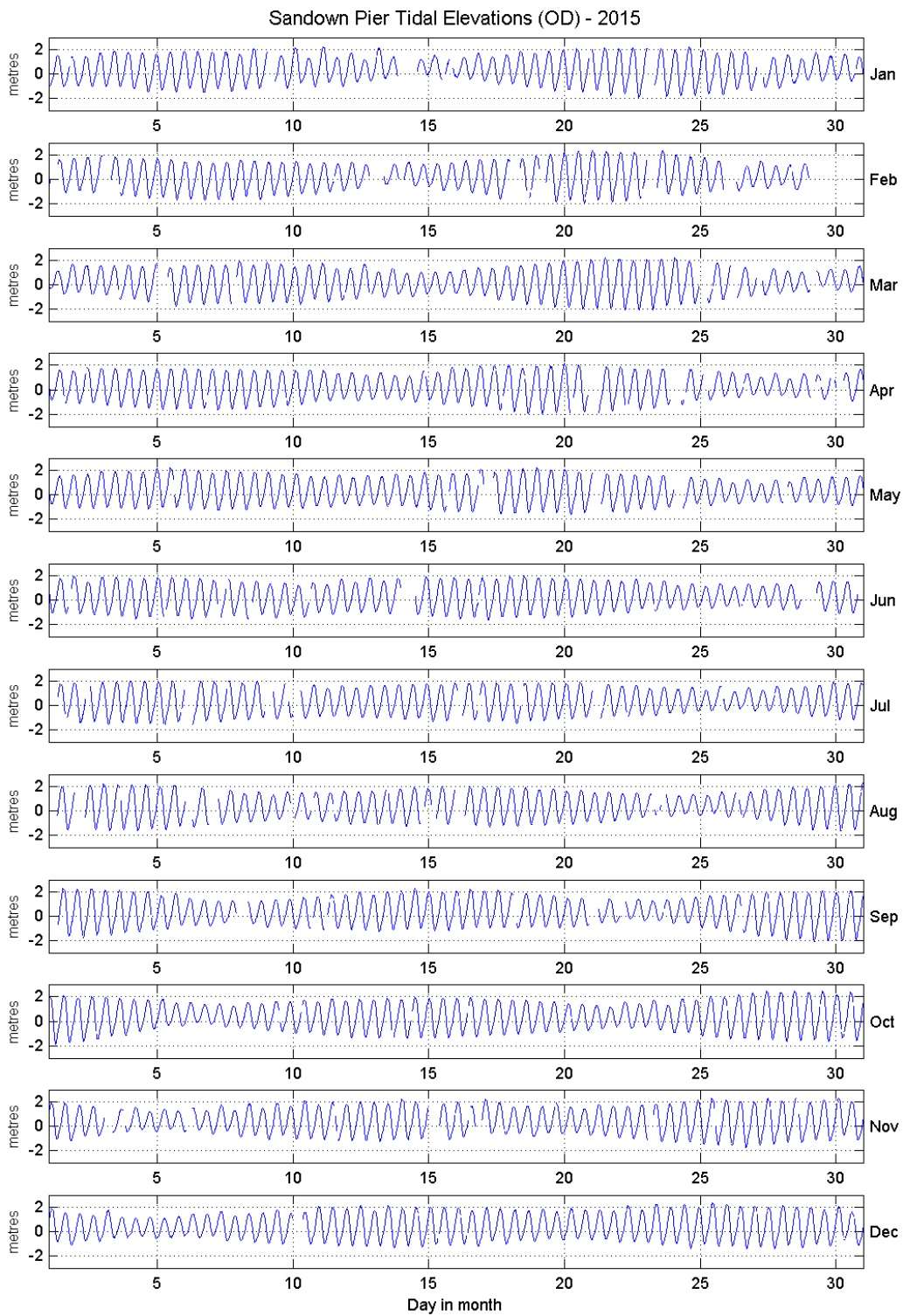


Figure 2: Sandown Pier tidal elevations for 2015 relative to Ordnance Datum

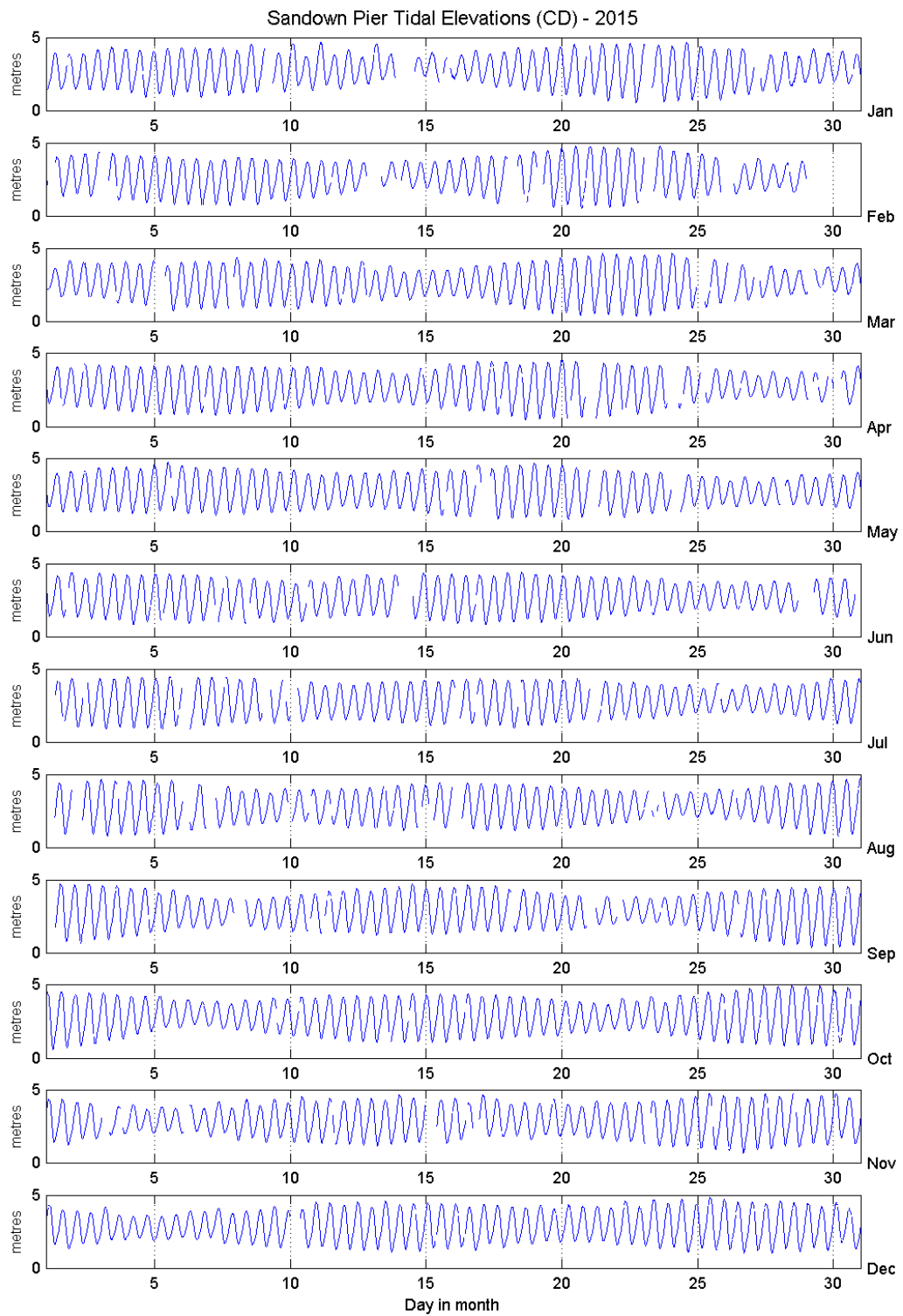


Figure 3: Sandown Pier tidal elevations for 2015 relative to Chart Datum