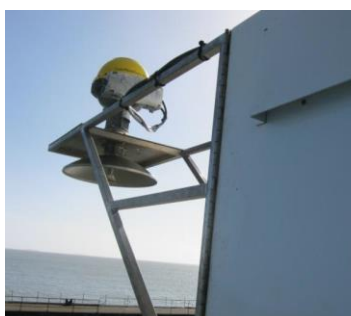



## Sandown Pier Wave Radar

<b>Location</b>			
OS	459965 E 83836 N		
WGS84	Latitude: 50° 39.067' N Longitude: 01° 09.189' W		
<b>Instrument type</b>			
Rosemount WaveRadar REX			
<b>Water depth</b>	N/A	Radar in situ on Sandown Pier. Photo courtesy of Fugro EMU Limited	Location of radar (Google mapping)

### Data Quality

<b>Recovery rate (%)</b>	<b>Sample interval</b>
93	30 minutes

### Monthly Averages - 2015

*All times are GMT*

Month	H <sub>s</sub> (m)	T <sub>p</sub> (s)	T <sub>z</sub> (s)	Dir. (°)	SST (°C)	No. of days
January	0.30	6.0	3.8	-	-	30
February	0.27	6.0	3.8	-	-	25
March	0.22	5.6	3.5	-	-	29
April	0.20	5.2	3.4	-	-	27
May	0.21	5.3	3.3	-	-	29
June	0.18	5.1	3.2	-	-	28
July	0.18	5.2	3.2	-	-	28
August	0.18	5.3	3.2	-	-	28
September	0.24	5.0	3.5	-	-	28
October	0.25	5.1	3.6	-	-	31
November	0.29	5.9	3.7	-	-	28
December	0.47	5.9	4.0	-	-	30

### Storm Analysis

Date/Time	H <sub>s</sub> (m)	T <sub>p</sub> (s)	T <sub>z</sub> (s)	Dir. (°)	Water level elevation* (OD)	Tidal stage (hours re. HW)	Tidal range (m)	Tidal surge* (m)	Max. surge* (m)
30-Dec-2015 04:30	1.56	6.4	5.9	-	1.24	HW +2	2.7	0.18	0.37

\* Tidal information is obtained from the nearest recording tide gauge (the radar also provides tidal data). The surge shown is the residual at the time of the highest H<sub>s</sub>. The maximum tidal surge is the largest positive surge during the storm event.

## Annual Statistics

Year	Annual $H_s$ exceedance* (m)						Annual Maximum $H_s$	
	0.05%	0.5%	1%	2%	5%	10%	Date	$A_{max}$ (m)
2006	-	1.36	1.26	1.13	0.87	0.66	03-Dec-2006 06:40	1.82
2007	1.85	1.26	1.07	0.93	0.72	0.58	18-Nov-2007 17:40	2.00
2008	1.86	1.43	1.29	1.07	0.80	0.61	13-Dec-2008 09:00	2.01
2009	1.63	1.32	1.23	1.09	0.86	0.64	13-Nov-2009 22:00	1.79
2010	1.65	1.35	1.17	0.98	0.73	0.58	08-Nov-2010 08:40	1.83
2011	1.63	1.34	1.16	0.96	0.73	0.59	13-Dec-2011 00:40	1.74
2012	1.51	1.26	1.04	0.86	0.58	0.42	25-Apr-2012 12:30	1.71
2013	1.76	1.32	1.13	0.95	0.68	0.50	24-Dec-2013 04:00	1.98
2014	1.79	1.42	1.28	1.08	0.76	0.53	05-Feb-2014 03:00	2.04
2015	1.40	1.08	0.92	0.76	0.60	0.48	30-Dec-2015 04:30	1.56

\* i.e. 5 % of the  $H_s$  values measured in 2006 exceeded 0.87 m

## Distribution plots

The distribution of wave parameters are shown in the accompanying graphs of:

- Annual time series of  $H_s$  (red line is 1.6 m storm threshold)
- Incidence of storm waves for 2015. Storm events are defined using the Peaks-over-Threshold method. The highest  $H_s$  of each storm event is shown
- Wave height exceedance each year since deployment
- Percentage of occurrence of  $H_s$ ,  $T_p$ ,  $T_z$  and Direction for 2015
- Joint distribution of all parameters for all measured data, given as percentage of occurrence

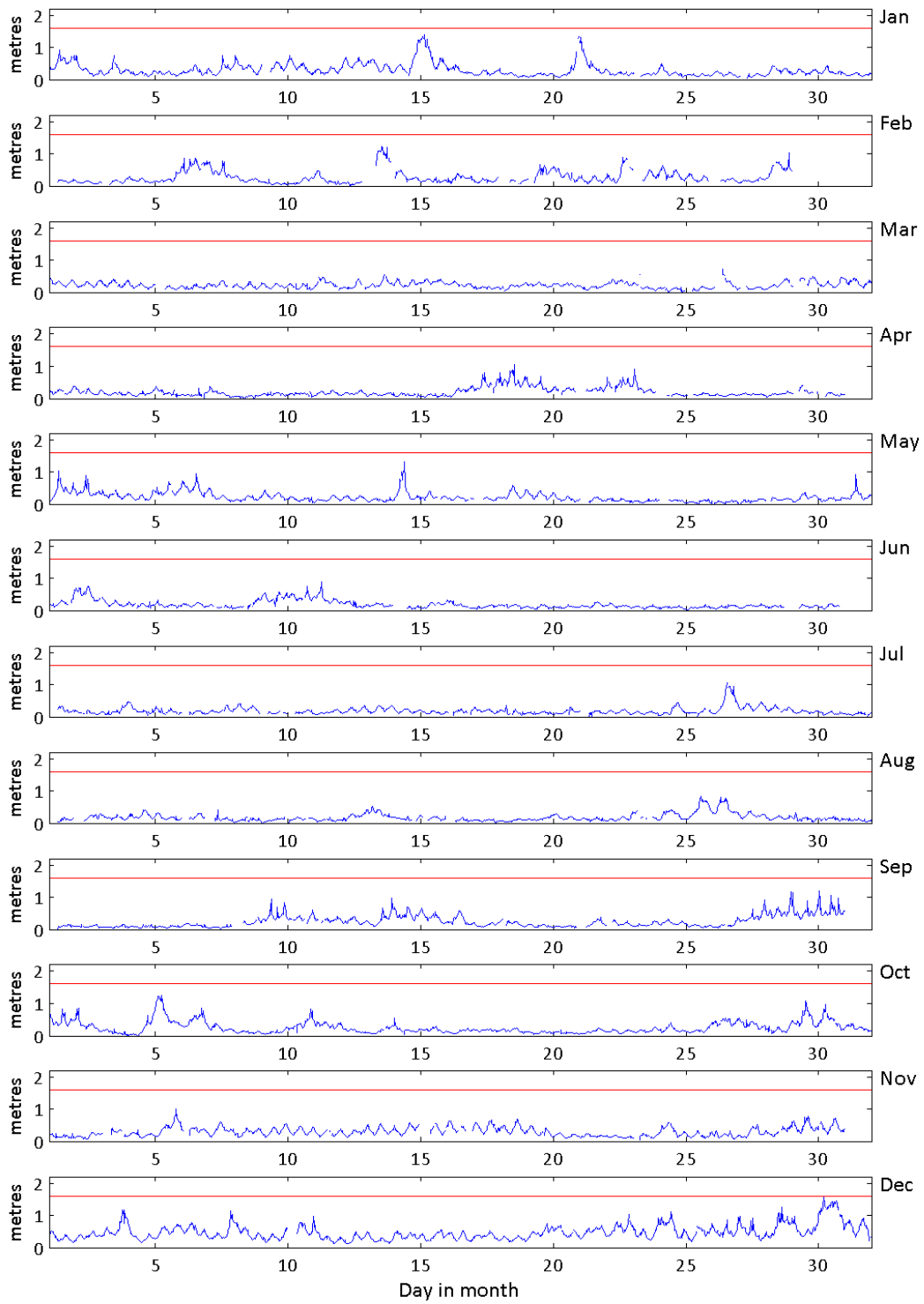
## General

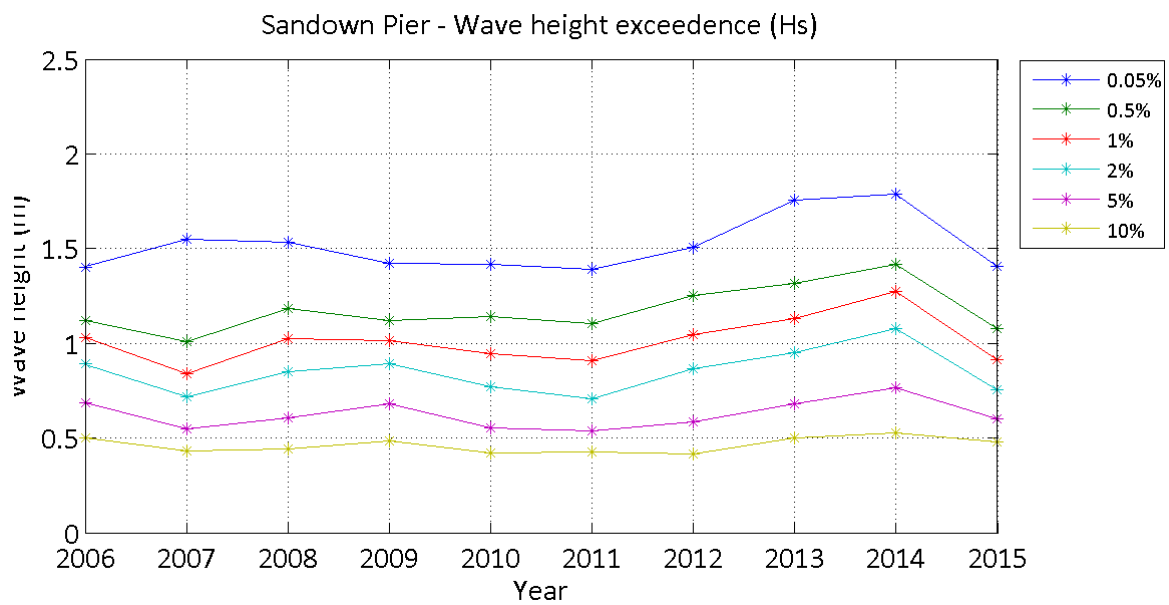
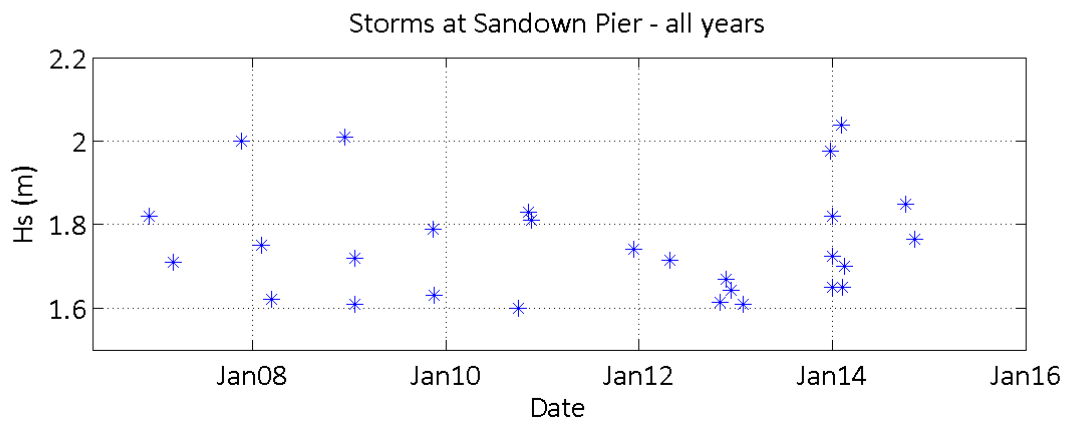
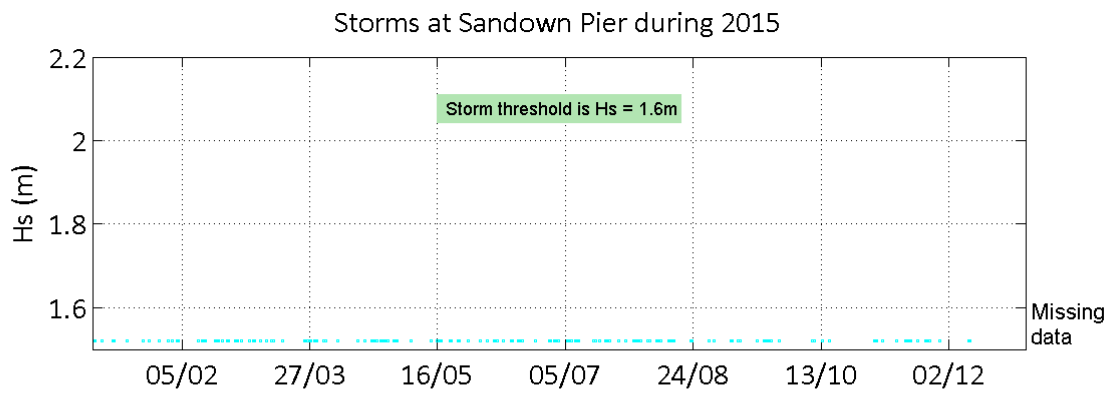
The WaveRadar REX was installed on 04 May 2006.

## Acknowledgements

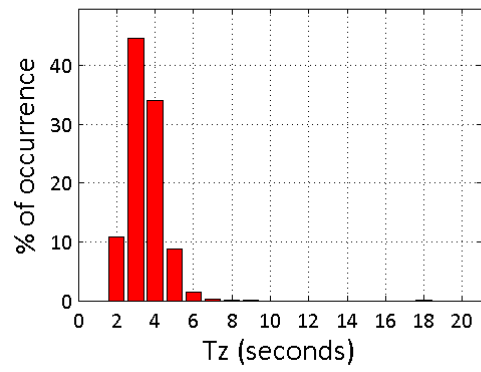
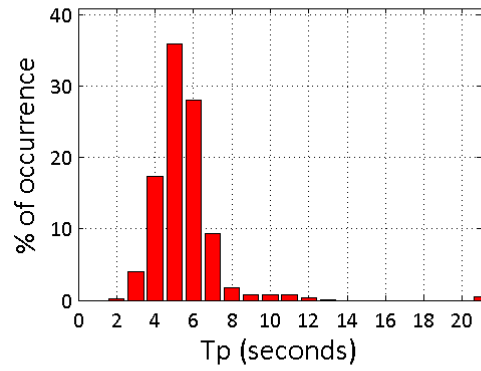
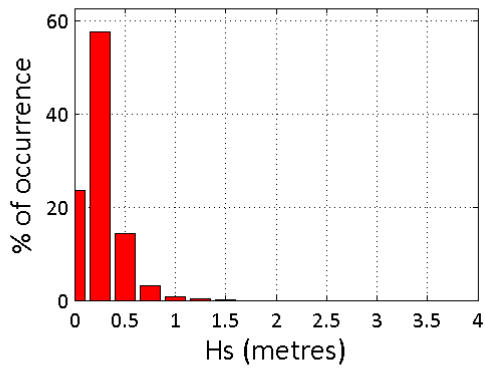
The WaveRadar is deployed on Sandown Pier by kind permission of the Pier owners. TASK2000 tidal prediction software was kindly provided by the Permanent Service for Mean Sea Level, Proudman Oceanographic Laboratory.

### Sandown Pier - Significant Wave Height (Hs) during 2015





Sandown Pier 2015



Sandown Pier 2006 to 2015 - Joint distribution (% of occurrence)

