



## Sandown Pier Wave Radar

<b>Location</b>			
OS	459964 E 83835 N		
WGS84	Latitude: 50° 39.066' 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

Recovery rate (%)	Sample interval
90	30 minutes

### Monthly Averages - 2014

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	0.46	6.3	4.1	-	-	31
February	0.55	6.8	4.3	-	-	27
March	0.26	5.8	3.7	-	-	22
April	0.19	5.2	3.3	-	-	27
May	0.18	4.9	3.2	-	-	30
June	0.14	5.1	3.1	-	-	28
July	0.13	4.8	3.1	-	-	30
August	0.18	5.0	3.2	-	-	28
September	0.17	4.5	3.2	-	-	26
October	0.27	5.2	3.6	-	-	27
November	0.39	5.2	3.8	-	-	26
December	0.23	5.6	3.7	-	-	26

## 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)
05-Feb-2014 03:00	2.04	7.5	6.3	-	2.44	HW	3.6	0.39	-
06-Oct-2014 09:00	1.85	-	4.3	-	-	HW	~3.4	-	-
01-Jan-2014 11:30	1.82	7.1	5.6	-	2.26	HW	3.3	0.25	-
07-Nov-2014 01:30	1.77	7.1	5.8	-	0.82	HW +3	3.4	0.08	-
14-Feb-2014 12:00	1.70	6.7	5.3	-	1.94	HW	2.6	0.32	-

## Annual Statistics

Year	Annual H <sub>s</sub> exceedance* (m)						Annual Maximum H <sub>s</sub>	
	0.05%	0.5%	1%	2%	5%	10%	Date	A <sub>max</sub> (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

\* i.e. 5 % of the H<sub>s</sub> 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<sub>s</sub> (red line is 1.6 m storm threshold)
- Percentage of occurrence of H<sub>s</sub> and T<sub>z</sub> for 2014
- Incidence of storm waves for 2014. Storm events are defined using the Peaks-over-Threshold method. The highest H<sub>s</sub> of each storm event is shown
- Joint distribution of all parameters for all measured data, given as percentage of occurrence

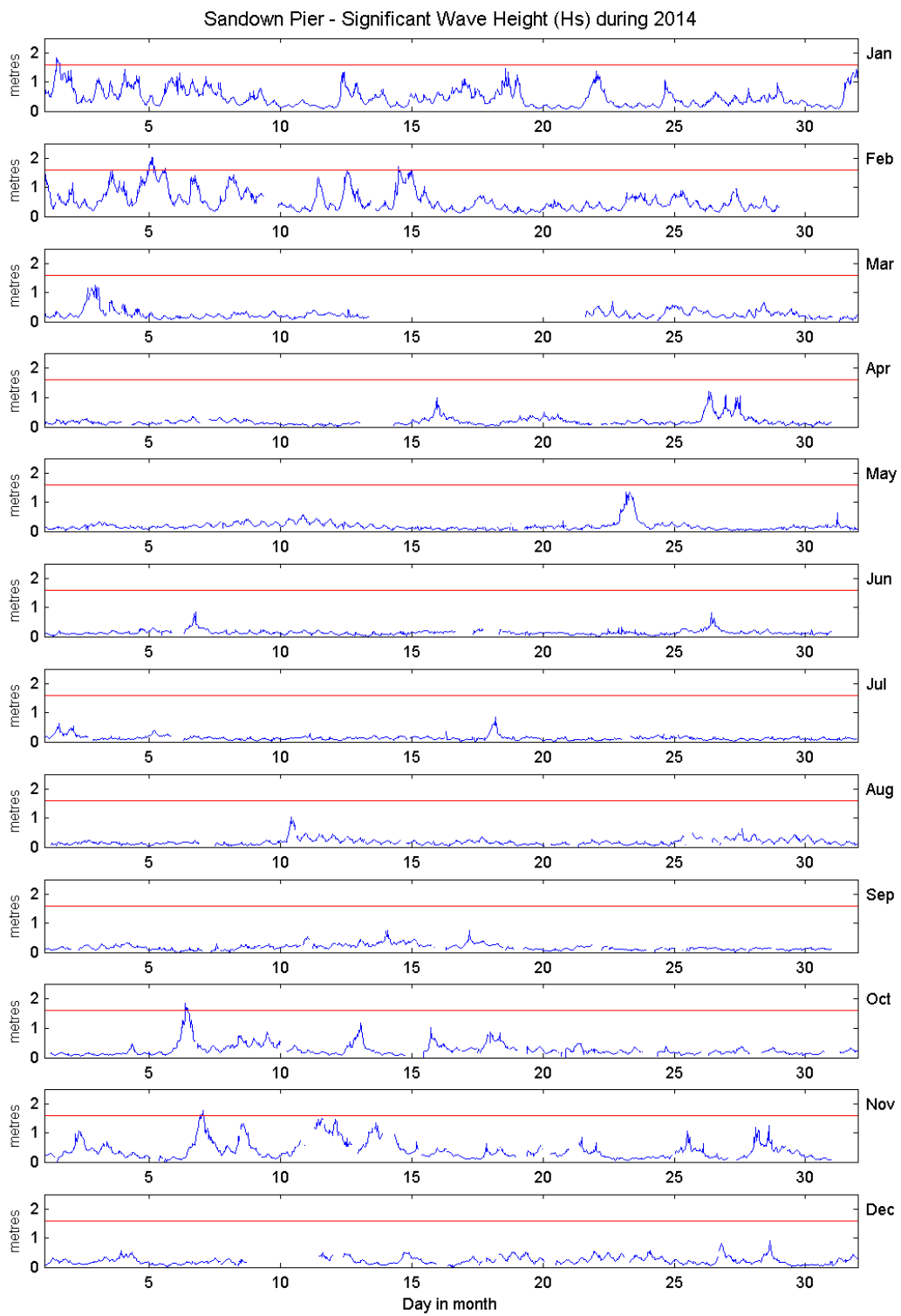
\* Tidal information is obtained from the nearest recording tide gauge (the radar also provides tidal data). The surge shown is the residual at the time of the highest H<sub>s</sub>. The maximum tidal surge is the largest positive surge during the storm event.

## **General**

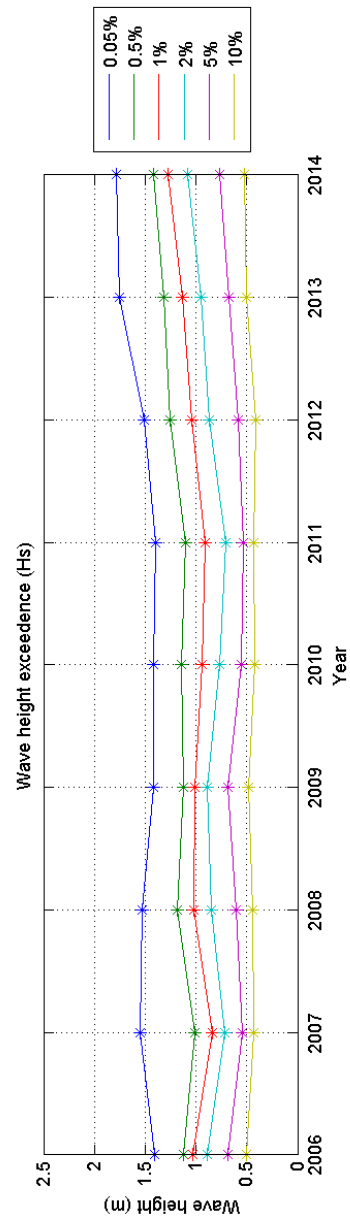
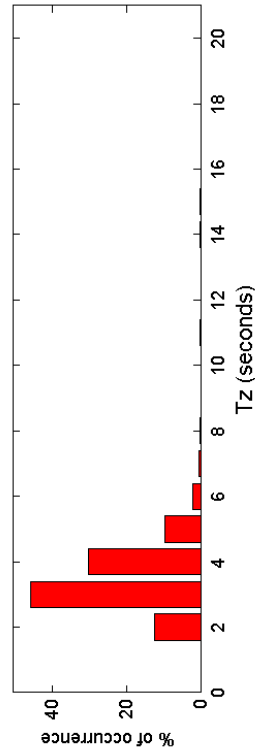
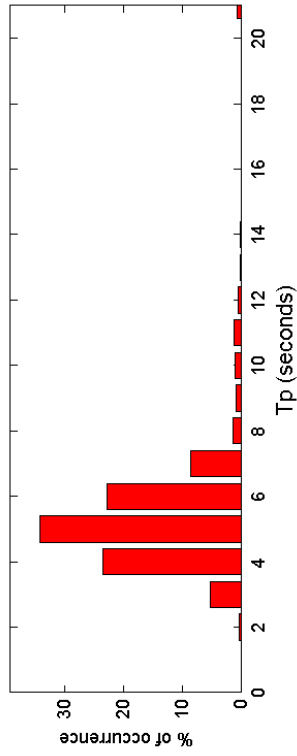
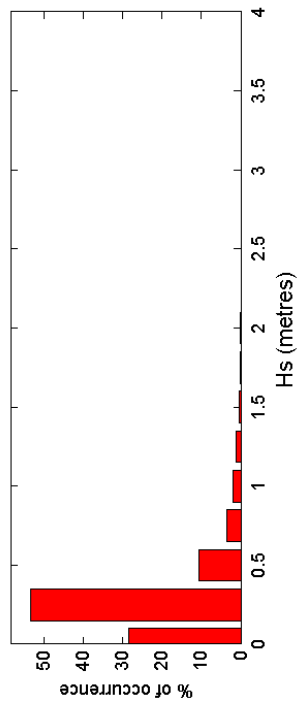
The WaveRadar REX was installed on 04 May 2006.

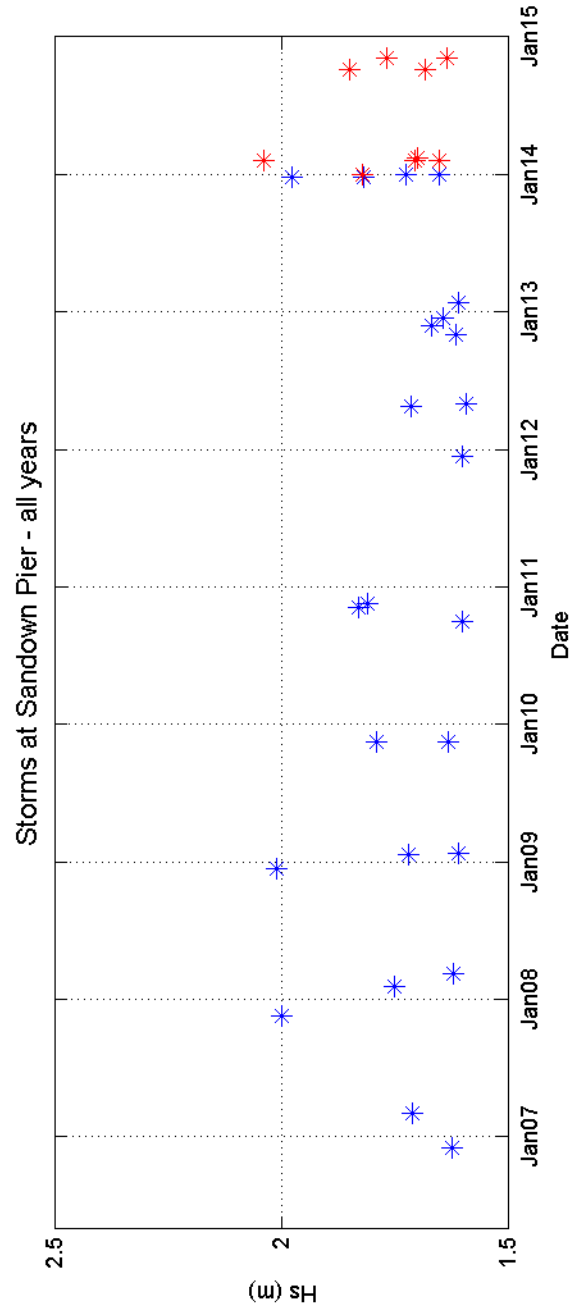
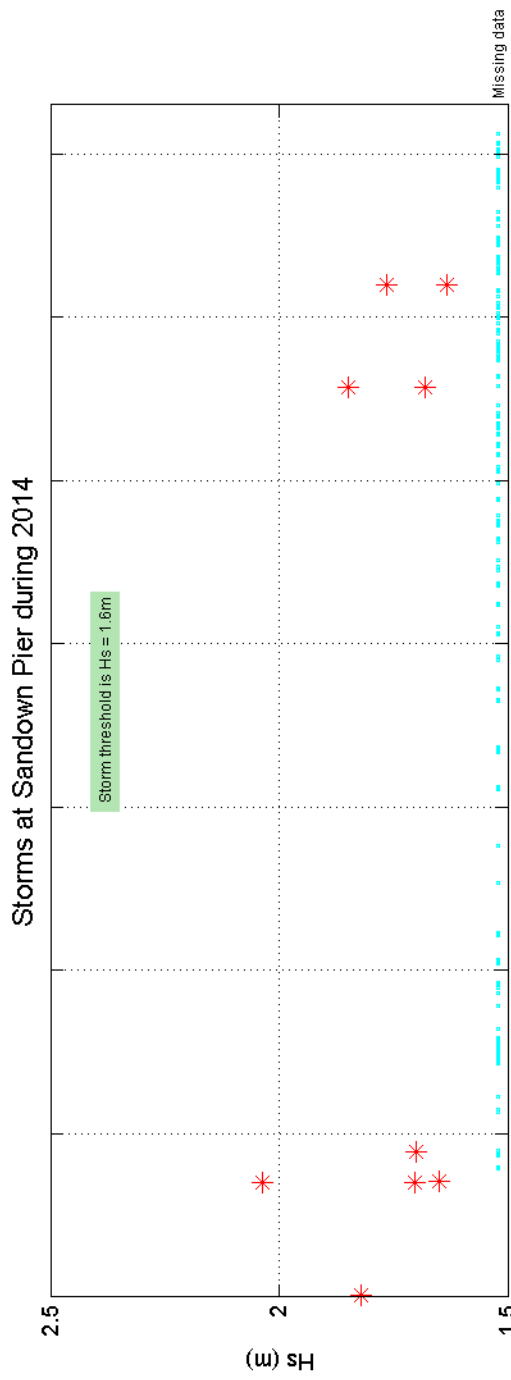
## **Acknowledgements**

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 2014





Sandown Pier 2006 to 2014 - Joint distribution (% of occurrence)

