



Porthleven Directional Waverider Buoy

Location			
OS	163360 E 23297 N		
WGS84	Latitude: 50° 03.756' N Longitude: 05° 18.471' W		
Instrument type			
Datawell Directional Waverider Mk III			
Water depth	~15m CD	Buoy in situ off Porthleven beach. Photo courtesy of Fugro EMU Limited	Location of buoy (Google mapping)

Data Quality

Recovery rate (%)	Sample interval
90	30 minutes

Monthly Averages - 2014

All times are GMT

Month	H _s (m)	T _p (s)	T _z (s)	Dir. (°)	SST (°C)	No. of days
January	2.40	11.8	6.3	235	10.0	30
February	3.38	12.1	6.8	230	9.3	4
March	1.24	11.5	6.0	238	9.5	27
April	1.12	10.7	5.6	232	10.5	30
May	0.87	9.0	5.1	239	12.3	31
June	0.71	9.1	4.8	225	14.6	30
July	0.62	8.4	4.6	235	16.6	31
August	0.94	8.1	4.6	233	16.0	31
September	0.56	11.0	5.8	227	16.6	30
October	1.44	9.8	5.3	233	15.5	31
November	1.55	10.8	6.2	233	13.3	25
December	1.45	9.8	5.6	240	11.8	31

Storm Analysis

Date/Time	H _s (m)	T _p (s)	T _z (s)	Dir. (°)	Water level elevation* (OD)	Tidal stage (hours re. HW)	Tidal range (m)	Tidal surge* (m)	Max. surge* (m)
03-Jan-2014 18:30	6.99	15.4	9.5	236	2.75	HW	5.0	0.14	0.45
06-Jan-2014 21:00	6.79	20.0	9.8	228	2.32	HW	3.9	0.29	0.47
05-Feb-2014 01:30	6.46	13.3	9.5	215	-0.89	HW +5	~4.5	0.76	-
26-Apr-2014 12:30	5.36	12.5	8.2	228	1.31	HW -2	3.9	0.39	0.45
03-Feb-2015 11:00	5.15	10.5	8.3	215	0.10	HW +4	5.5	0.50	0.57

Annual Statistics

Year	Annual H _s exceedance* (m)						Annual Maximum H _s	
	0.05%	0.5%	1%	2%	5%	10%	Date	A _{max} (m)
2011	-	-	-	3.98	3.40	2.83	13-Dec-2011 06:00	4.84
2012	5.52	4.3	3.79	3.35	2.78	2.19	15-08-2012 18:30	5.95 ⁺
2013	5.82	4.61	4.20	3.81	3.18	2.56	23-Dec-2013 21:30	6.43 ⁺
2014	6.57	4.83	4.28	3.54	2.93	2.39	03-Jan-2014 18:30	6.99 ⁺ **

* i.e. 5 % of the H_s values measured in 2011 exceeded 3.40 m

⁺Note that waves were breaking at the buoy for several hours during this storm; where breaking waves were clearly present in the measured time series, the parameters have been omitted. Accordingly, there may have been short periods where measured significant wave heights exceeded this value.

** The buoy was badly damaged at the height of the storms in early February 2014 and accordingly may have missed even higher wave conditions later that month.

Distribution plots

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

- Annual time series of H_s (red line is 5.0 m storm threshold)
- Wave roses (percentage of occurrence of direction vs. H_s) for all measured data
- Percentage of occurrence of H_s, T_p, T_z and Direction for 2014
- Incidence of storm waves for 2014. Storm events are defined using the Peaks-over-Threshold method. The highest H_s of each storm event is shown
- Joint distribution of all parameters for all measured data, given as percentage of occurrence

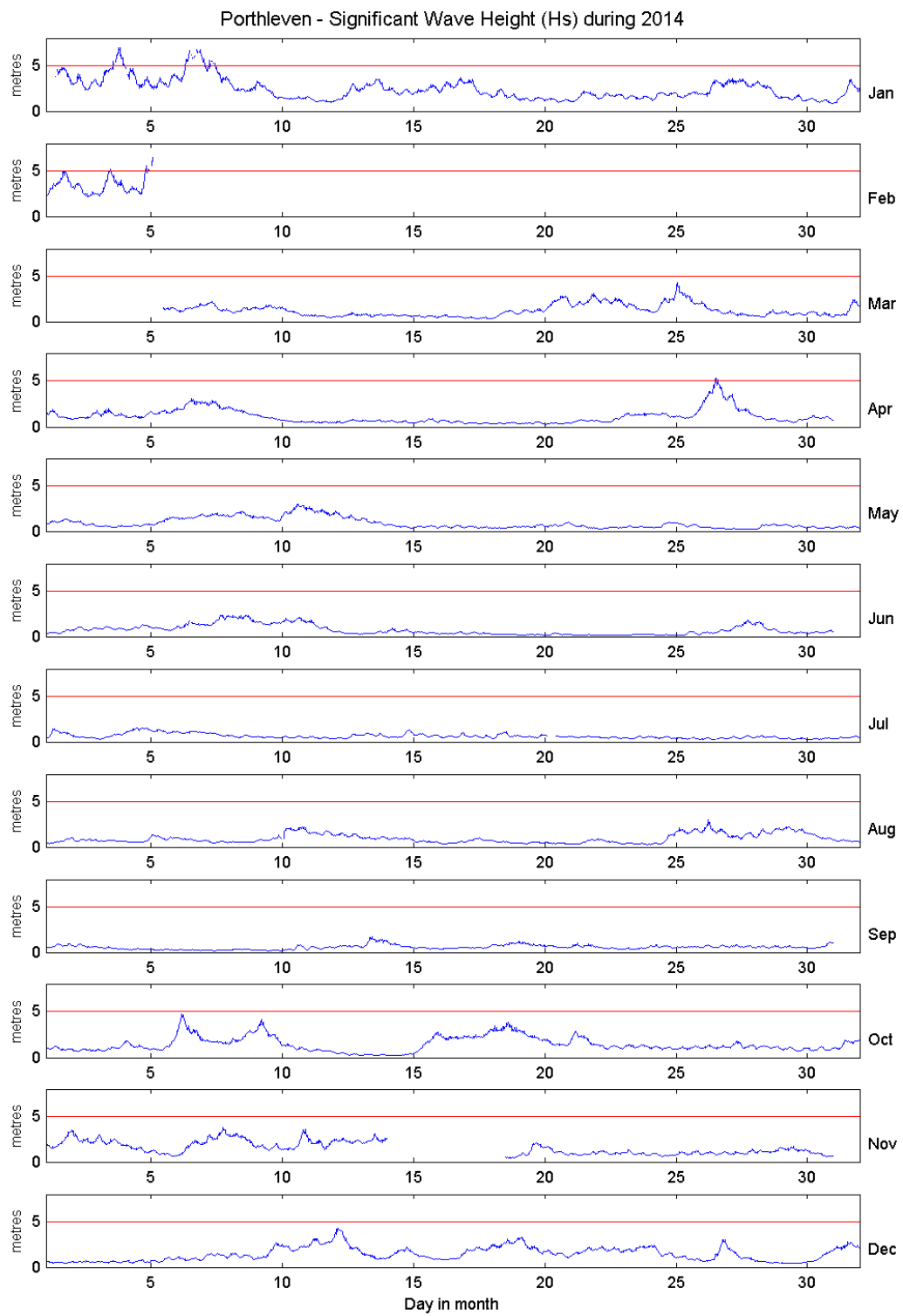
* Tidal information is obtained from the nearest recording tide gauge (the National Network gauge at Newlyn). The surge shown is the residual at the time of the highest H_s. The maximum tidal surge is the largest positive surge during the storm event.

General

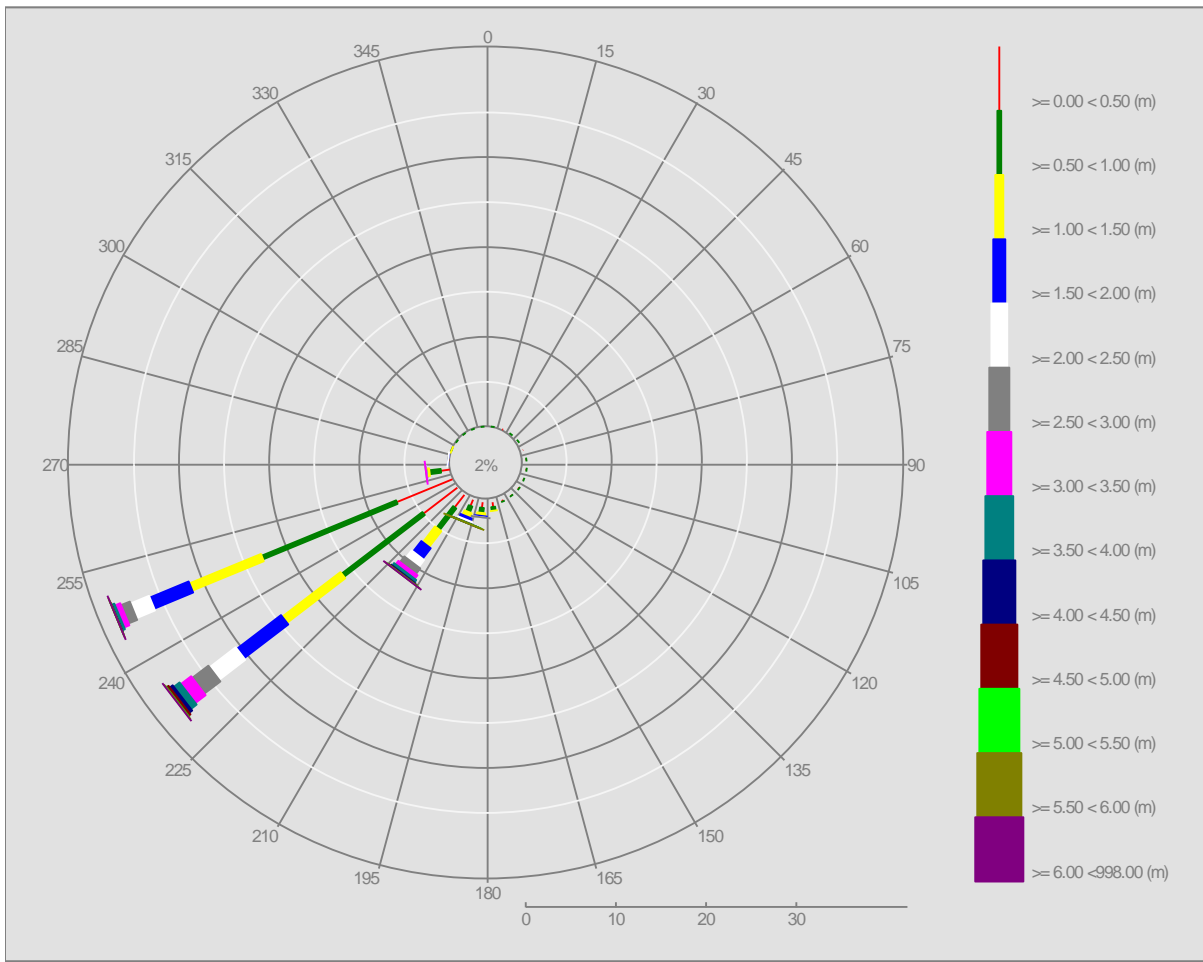
The buoy was first deployed on 17 October 2011, at which time the magnetic declination at the site was 3.2° west, changing by 0.15° east per year.

Acknowledgements

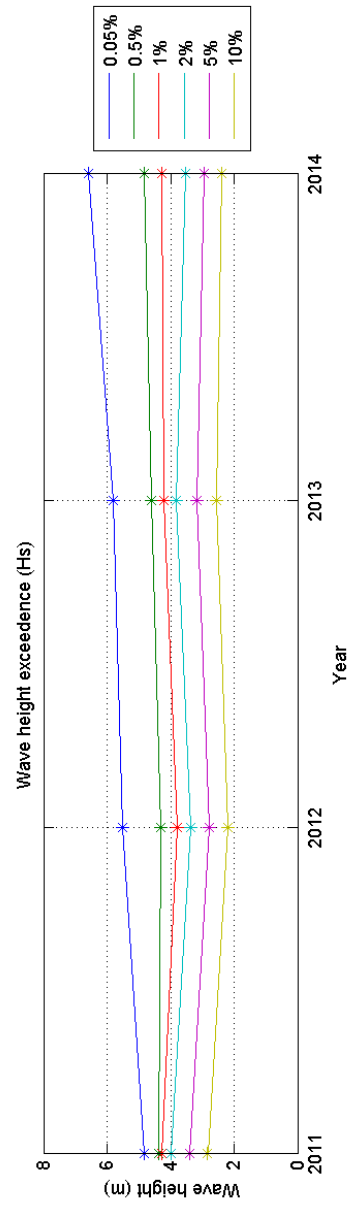
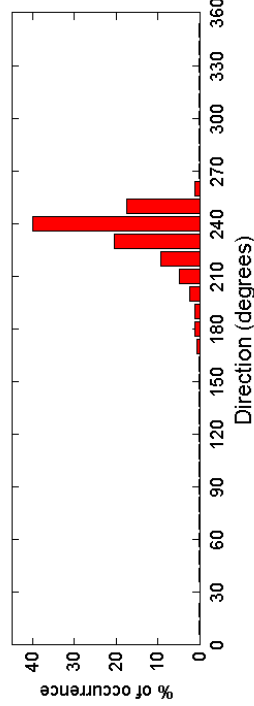
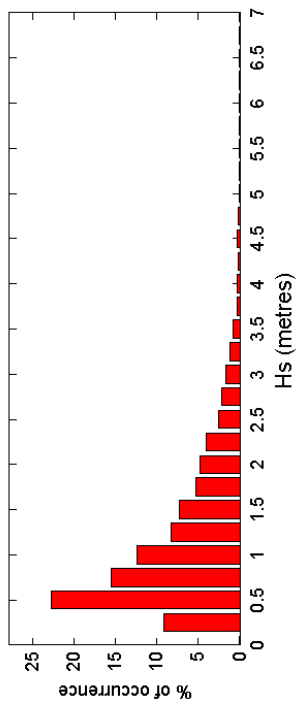
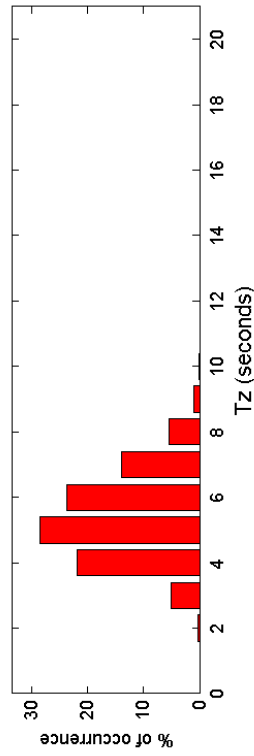
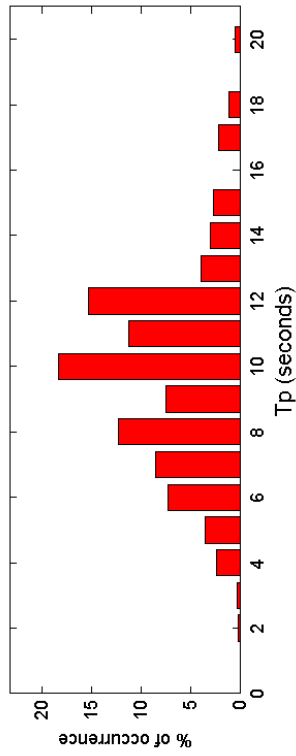
Tidal data were supplied by the British Oceanographic Data Centre as part of the function of the National Tidal and Sea Level Facility, hosted by the Proudman Oceanographic Laboratory and funded by DEFRA and the Natural Environment Research Council.

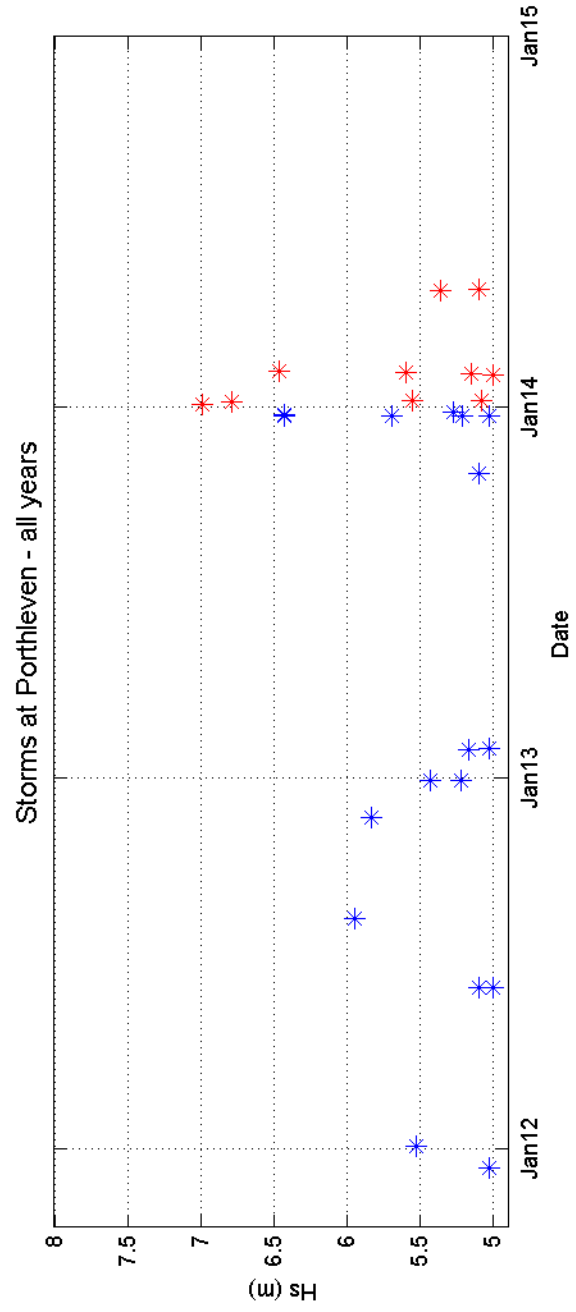
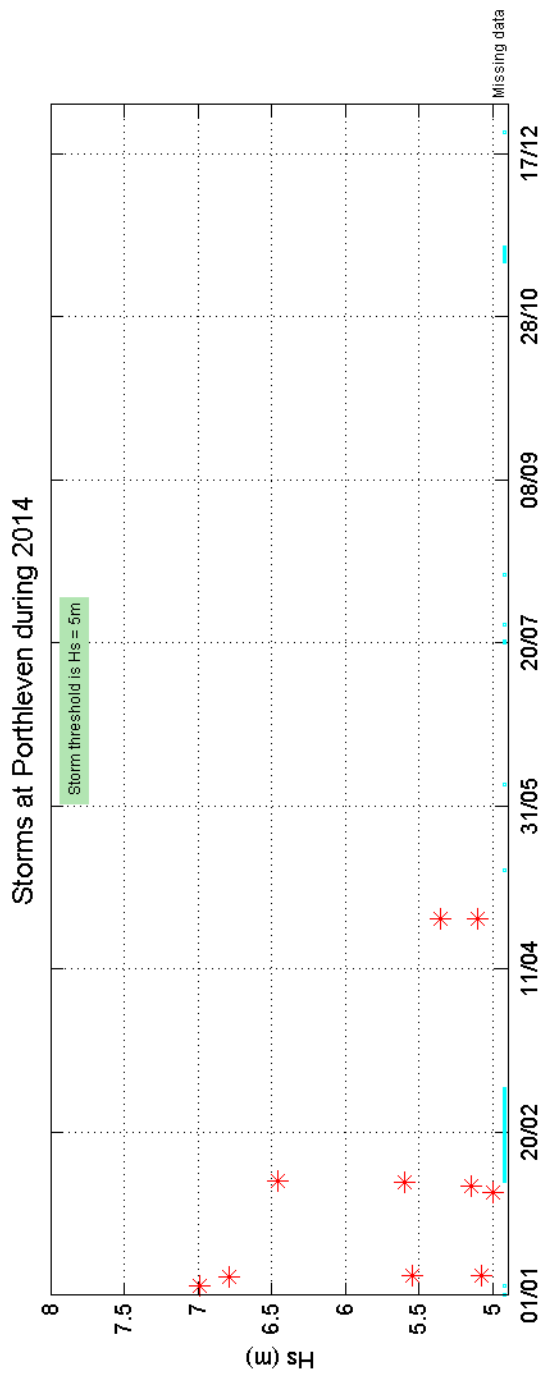


Offshore Wave Hs (m) PorthlevenWB : 17/10/2011 - 31/12/2014



Porthleven 2014





Porthleven 2011 to 2014 - Joint distribution (% of occurrence)

