

Porthleven Directional Waverider Buoy

Location

OS: 163360E 23297N

WGS84: Latitude: 50° 03.756' N Longitude: 05° 18.471' W

Water Depth

~15 m CD

Instrument Type

Datawell Directional Waverider Mk III

Data Quality

Recovery rate (%)	Sample interval
99	30 minutes

Statistics - 2012

All times are GMT

Month	H _s (m)	T _p (s)	T _z (s)	Dir. (°)	SST (°C)	No. of days
January	1.34	10.8	5.3	240	10.6	29
February	0.91	11.7	5.7	239	9.4	29
March	0.93	11.9	5.9	240	10.1	31
April	1.06	9.9	5.2	236	10.4	30
May	0.78	8.8	5.0	222	11.9	31
June	1.38	8.8	5.3	233	13.9	30
July	0.84	7.4	4.6	240	14.6	31
August	1.33	9.2	5.3	232	16.2	31
September	0.75	9.7	4.8	238	15.4	30
October	1.26	9.7	5.6	233	14.2	31
November	1.42	10.2	5.6	237	12.3	30
December	1.99	10.8	6.0	234	10.7	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)
15-Aug-2012 18:30	5.95	13.3	8.7	225	0.59	HW +3	3.6	0.29	0.45
22-Nov-2012 15:00	5.83	10.0	8.0	219	0.49	HW +3	3.0	0.15	0.34
03-Jan-2012 10:30	5.53	11.8	7.8	233	1.04	HW -1	1.9	-0.01	0.18
29-Dec-2012 06:00	5.43	10.0	7.7	221	2.24	HW +1	4.1	0.17	0.27
07-Jun-2012 16:00	5.10	11.8	7.8	226	0.44	HW -3	4.6	0.30	0.53

* 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.

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 ⁺

* 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.

Distribution plots

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

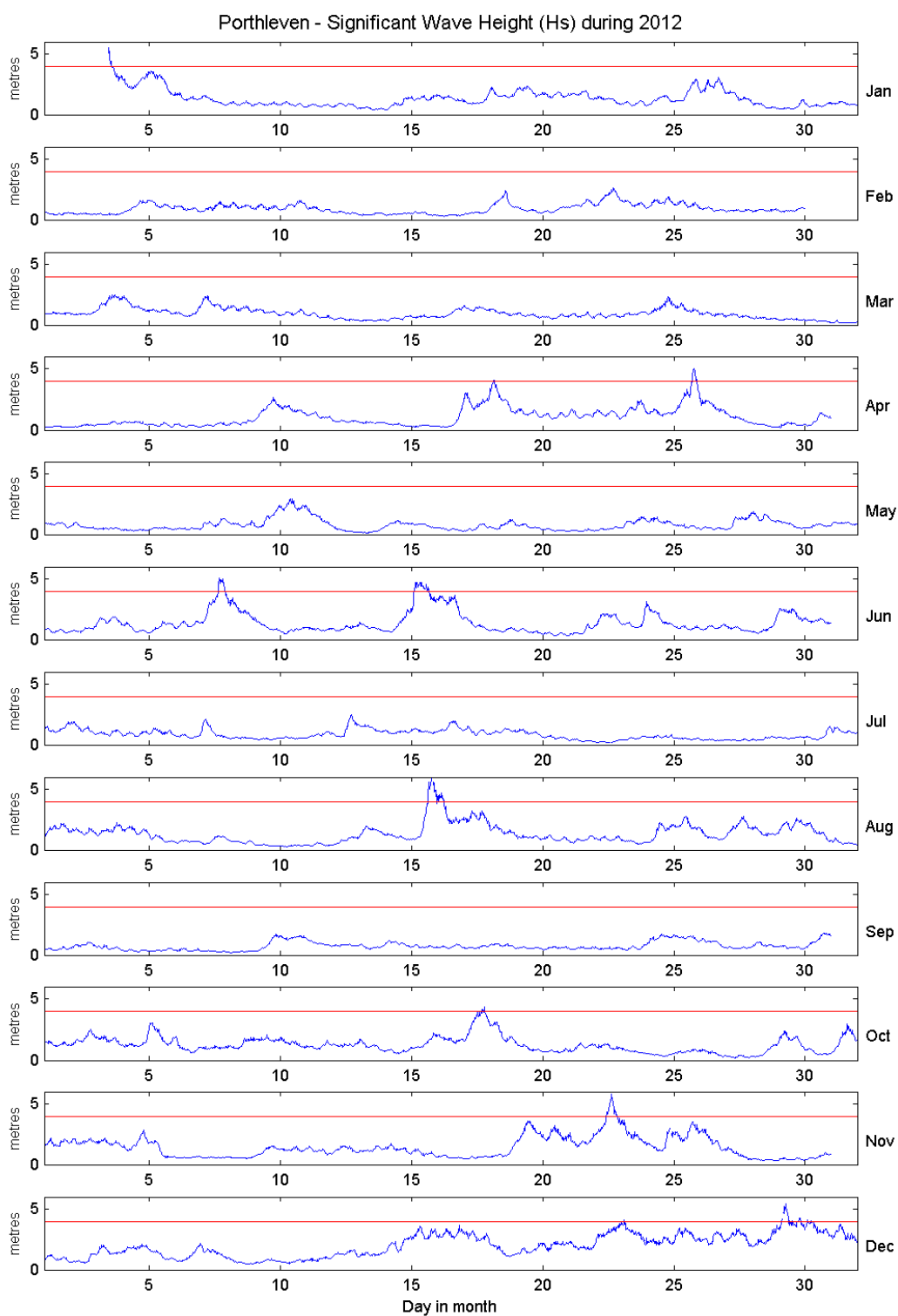
- Annual time series of H_s (red line is 4.0 m storm threshold)
- Wave roses (Direction vs. H_s and vs. T_p) for all measured data
- Percentage of occurrence of H_s , T_p , T_z and Direction for 2012
- Incidence of storm waves for 2012. Storm events are defined using the Peaks-over-Threshold method. The highest H_s of each storm event is shown
- Joint distribution of all parameters for all measured data, given as percentage of occurrence

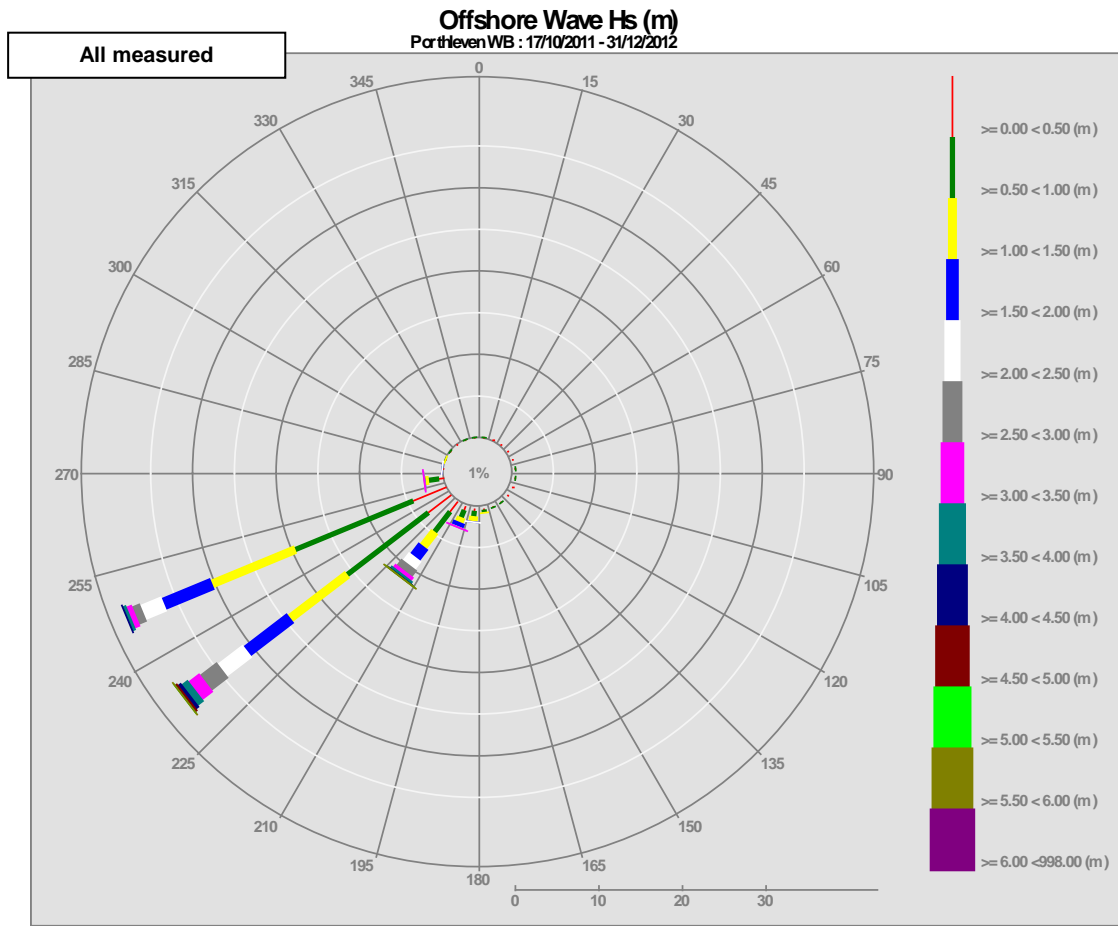
General

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.

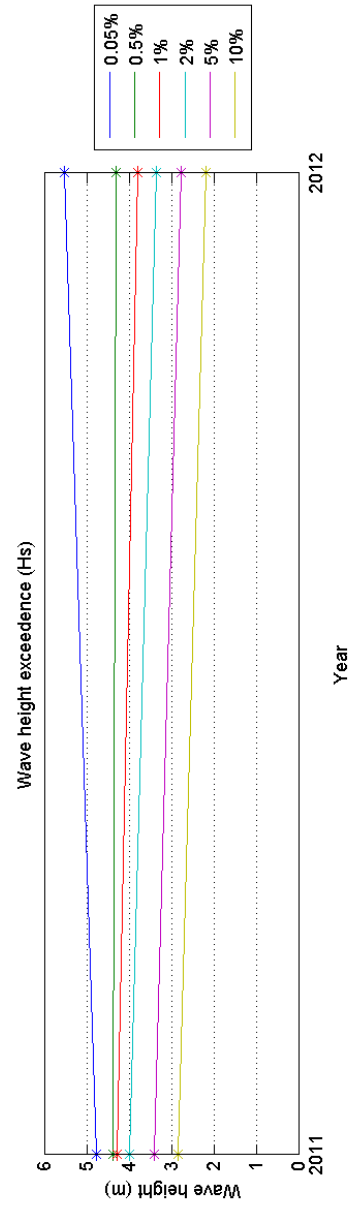
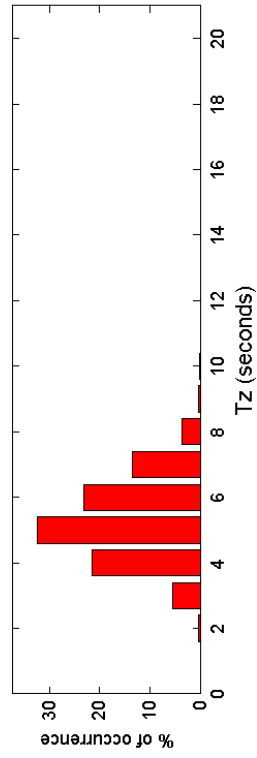
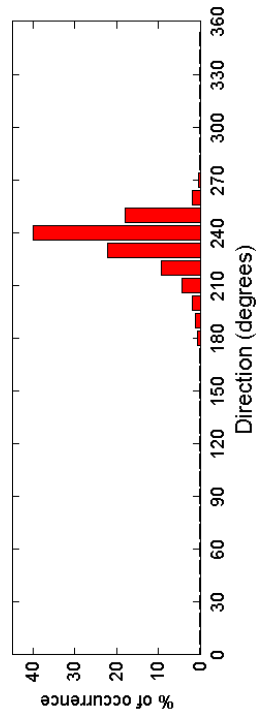
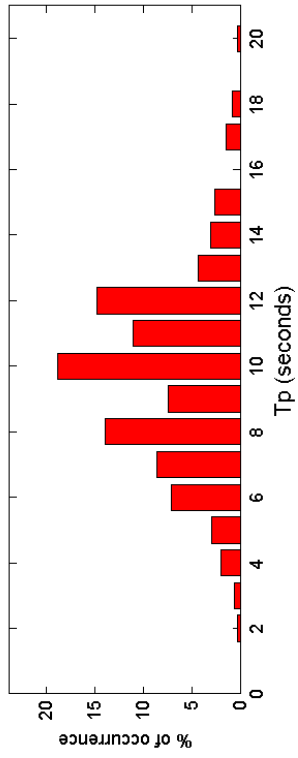
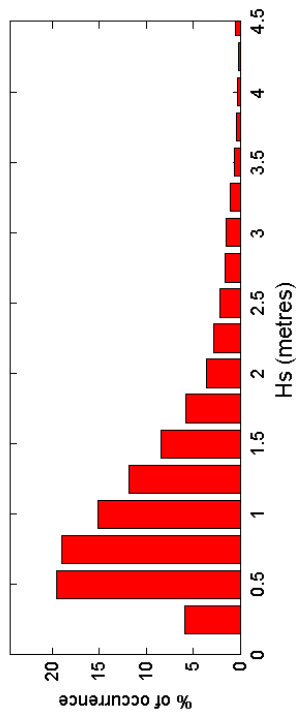
Acknowledgements

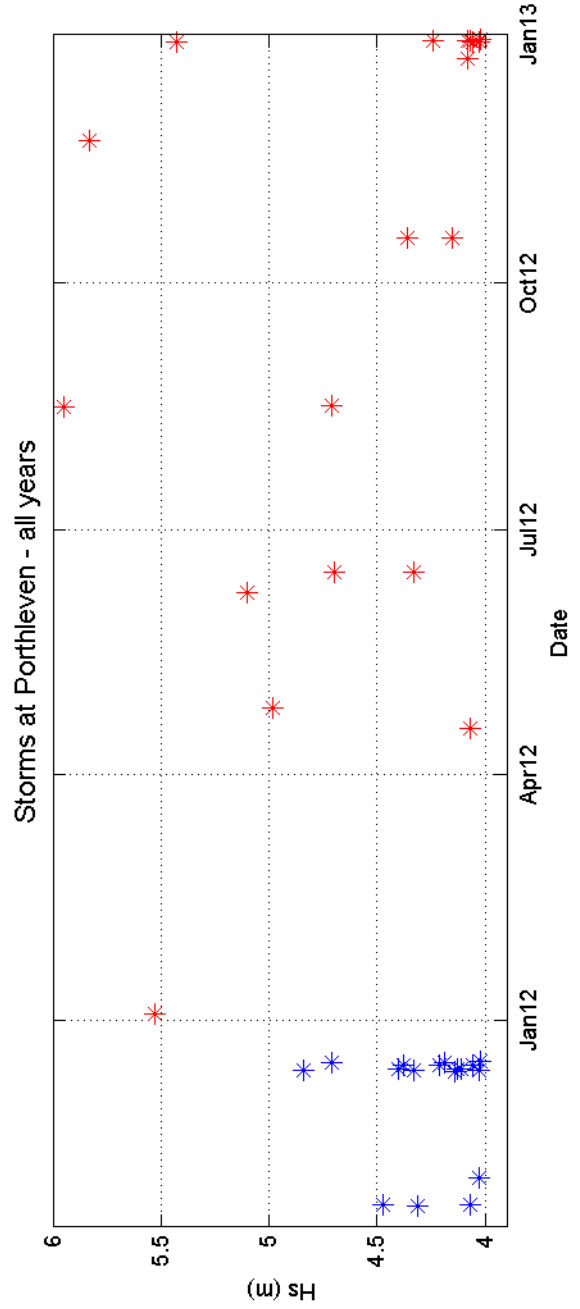
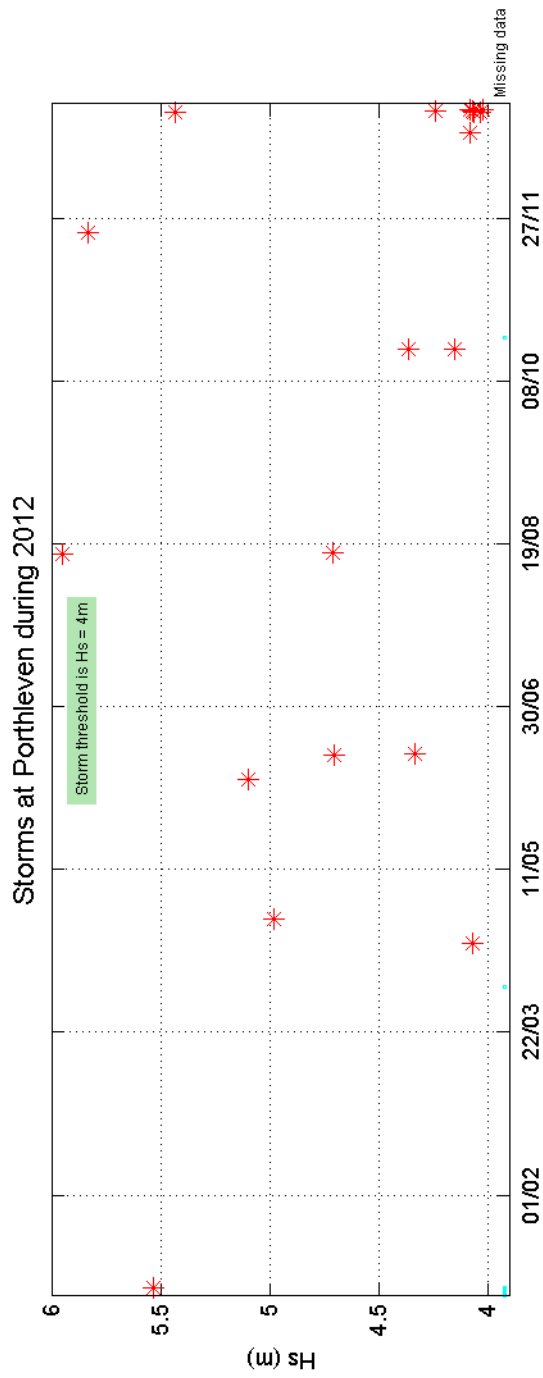
Tidal data were supplied by the British Oceanographic Data Centre as part of the function of the National Tidal and Sea Level Facility, hosted by the Proudman Oceanographic Laboratory and funded by DEFRA and the Natural Environment Research Council.





Porthleven 2012





Porthleven 2011 to 2012 - Joint distribution (% of occurrence)

