



Wave Hub Directional Waverider Buoy

Location			
OS	142878 E 56036 N		
WGS84	Latitude: 50° 20.84' N Longitude: 05° 36.86' W		
Instrument type			
Datawell Directional Waverider Mk III			
Water depth	~50m CD	Example buoy in situ. Photo courtesy of Fugro EMU Limited	Location of buoy (Google mapping)

Data Quality

Recovery rate (%)	Sample interval
57	30 minutes

Monthly averages - 2015

All times are GMT

Month	H _s (m)	T _p (s)	T _z (s)	Dir. (°)	SST (°C)	No. of days
January	-	-	-	-	-	-
February	-	-	-	-	-	-
March	-	-	-	-	-	-
April	-	-	-	-	-	-
May	-	-	-	-	-	-
June	1.40	8.7	5.4	238	13.2	26
July	1.67	8.7	5.5	260	14.8	30
August	1.55	8.9	5.6	267	14.8	31
September	1.39	8.0	4.9	236	14.9	30
October	1.62	10.4	5.7	232	14.5	31
November	3.11	10.8	6.8	277	13.5	30
December	3.75	12.1	7.3	267	12.4	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)
29-Nov-2015 17:30	6.58	10.5	7.8	277	1.48	HW -2	6.1	-0.08	0.25
05-Dec-2015 17:30	6.53	15.4	9.3	286	-	HW +4	~3.3	-	-
31-Dec-2015 05:00	6.50	14.3	8.3	266	-0.62	HW -4	~5.0	0.03	0.50
30-Dec-2015 09:30	6.24	15.4	9.3	273	3.17	HW +1	5.7	0.52	0.67
06-Dec-2015 06:30	6.12	14.3	8.9	284	-	HW +5	~3.0	-	-

Annual Statistics

Year	Annual H _s exceedance* (m)						Annual Maximum H _s	
	0.05%	0.5%	1%	2%	5%	10%	Date	A _{max} (m)
2015	-	-	-	5.26	4.54	4.01	29-Nov-2015 17:30	6.58

* i.e. 5 % of the H_s values measured in 2015 exceeded 4.54 m

Distribution plots

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

- Annual time series of H_s (red line is 5m 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
- Wave rose (percentage of occurrence of direction vs. H_s) for all measured data

General

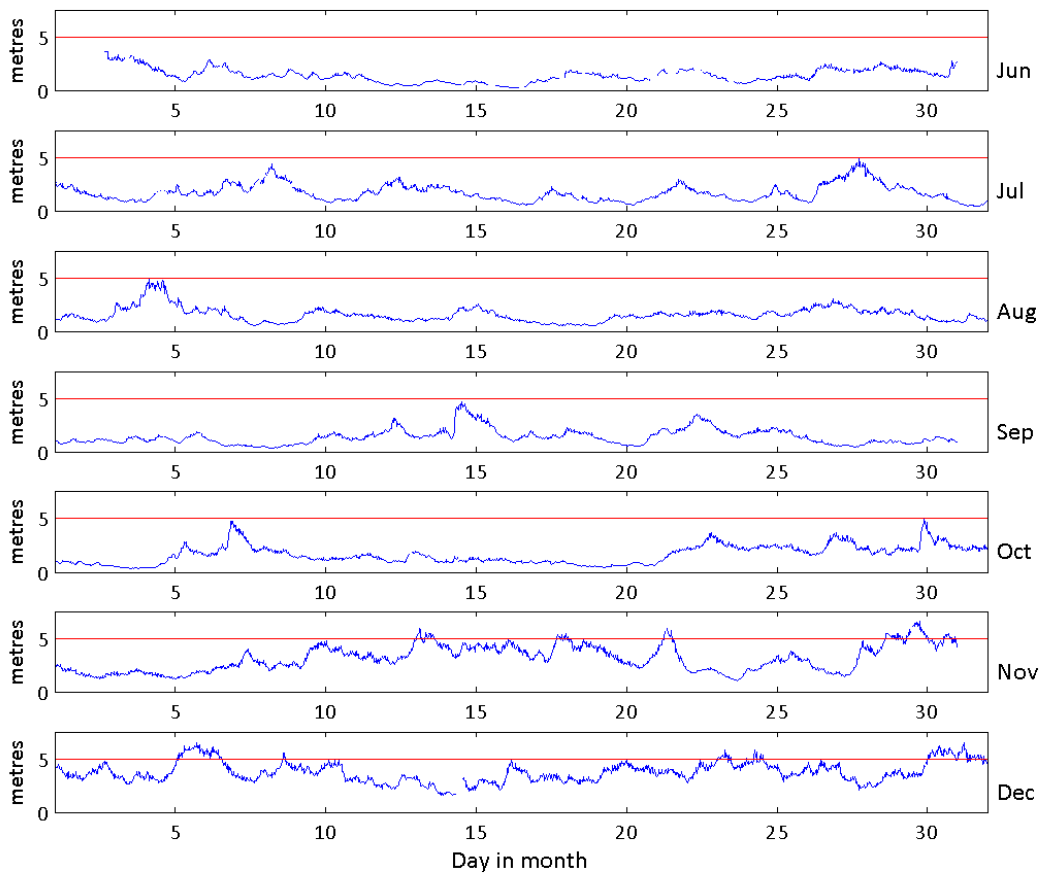
The buoy was first deployed on 22 May 2015, at which time the magnetic declination at the site was 2.65° west, changing by 0.15° east per year.

Acknowledgements

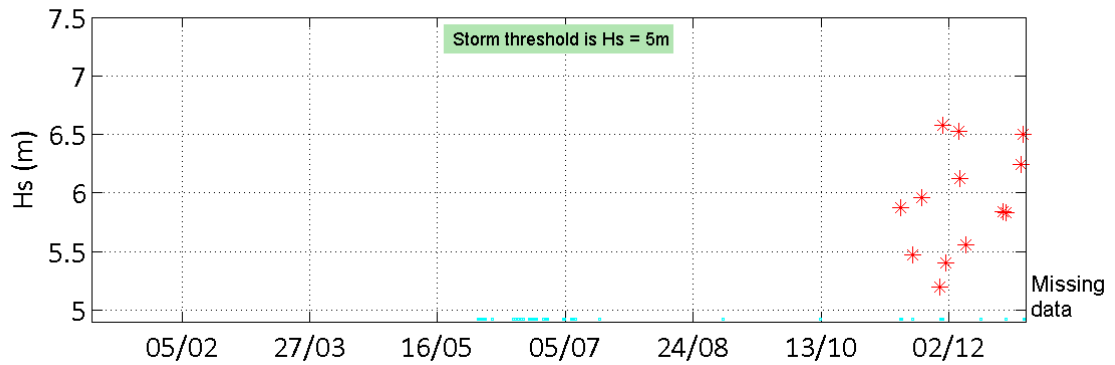
The wave buoy is owned by Wave Hub Ltd., who have kindly agreed to make the data freely available via the Channel Coastal Observatory website. The shore station is kindly hosted by Perranporth Youth Hostel. TASK2000 tidal prediction software was kindly provided by the Permanent Service for Mean Sea Level, Proudman Oceanographic Laboratory.

* Tidal information is obtained from the nearest recording tide gauge (the step gauge at Port Isaac). 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.

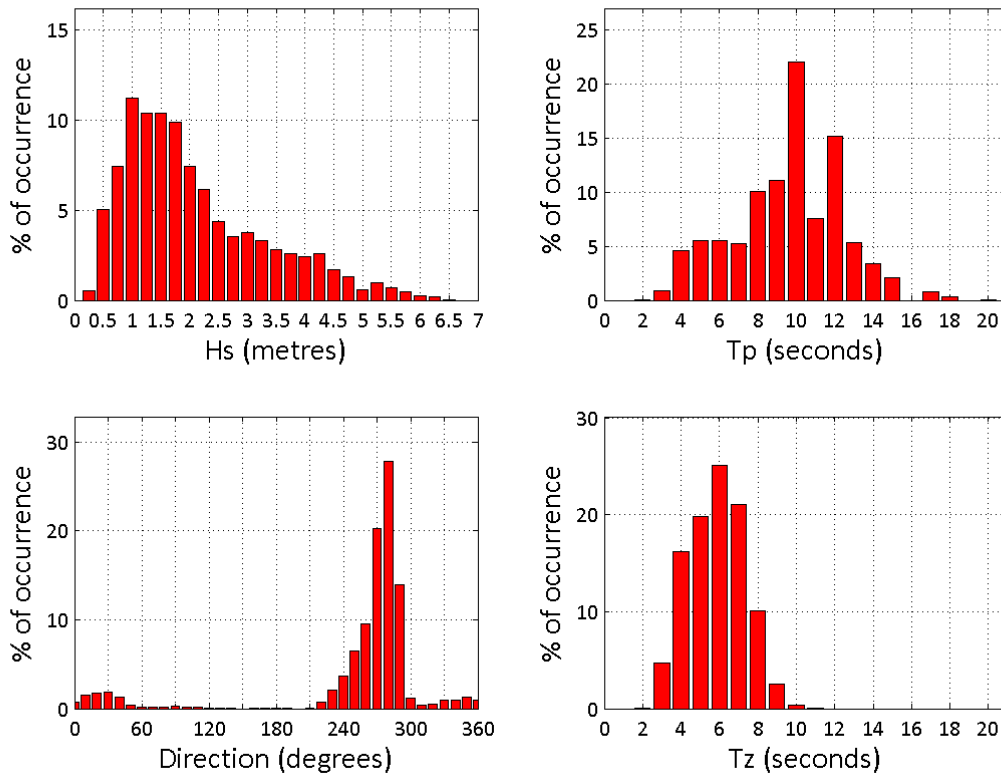
Wave Hub – Significant Wave Height (Hs) during 2015



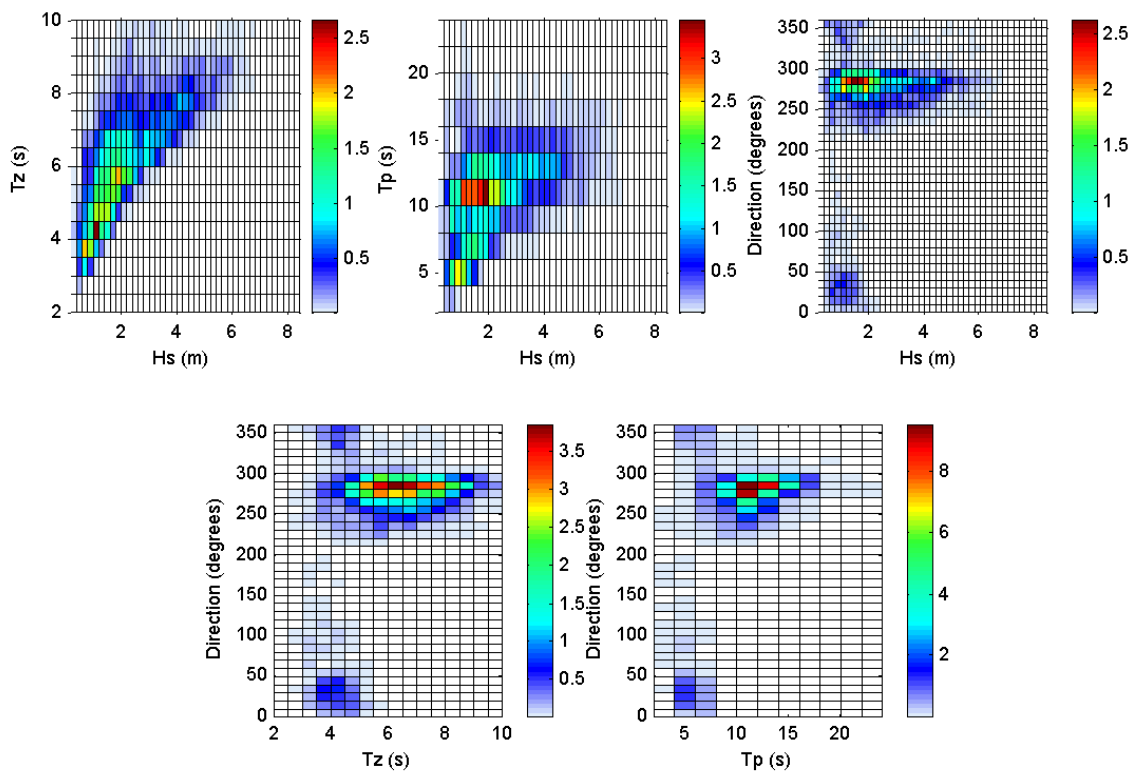
Storms at Wave Hub during 2015



Wave Hub 2015



Wave Hub 2015 to 2015 - Joint distribution (% of occurrence)



Offshore Wave Hs (m)
Wave Hub WB: 02/06/2015 - 31/12/2015

