

## Penzance Directional Waverider Buoy

### Location

OS: 149662E 29688N  
 WGS84: Latitude: 50° 06.86' N Longitude: 005° 30.18' W

### Water Depth

Approx. 10m CD

### Instrument Type

Datwell Directional Waverider Mk III

### Data Quality

C1(%)	Sample interval
99	30 minutes

### Monthly Means

All times GMT

Month	H <sub>s</sub>	T <sub>p</sub>	T <sub>z</sub>	Direction	SST	No. of days
	(m)	(s)	(s)	(°)	(°C)	
January	1.08	9.9	4.8	188	10.5	31
February	0.85	8.8	4.4	177	10.0	29
March	0.71	8.7	4.4	189	9.9	30
April	0.50	8.2	4.2	181	10.4	30
May	0.45	6.6	3.9	170	13.0	31
June	0.39	8.4	4.3	186	14.3	30
July	0.59	7.0	4.1	184	14.8	31
August	0.65	6.9	4.2	186	15.3	31
September	0.55	8.2	4.4	177	15.0	30
October	0.66	8.3	4.4	187	14.2	31
November	0.51	7.8	4.2	188	12.2	29
December	0.63	9.8	4.5	180	10.4	31

Tables and plots of these values, together with the minimum and maximum values and the standard deviation are available on the website.

Highest storm events in 2008									
Date/Time	H <sub>s</sub>	T <sub>p</sub>	T <sub>z</sub>	Dir.	Water level elevation* (OD)	Tidal stage (hours re. HW)	Tidal range (m)	Tidal surge* (m)	Max. surge* (m)
13-Jan-2008 11:30	4.54	10.5	7.4	187	-0.30	HW +4	4.21	0.53	0.57
03-Feb-2008 13:00	4.24	10.0	7.3	187	1.37	HW -1	2.34	0.47	0.49
05-Jul-2008 10:30	2.90	10.5	6.3	193	-0.57	HW +4	4.53	0.30	0.35
10-Mar-2008 05:00	2.89	10.0	6.6	191	2.65	HW -1	5.60	0.47	0.81

\* 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<sub>s</sub>. The maximum tidal surge is the largest positive surge during the storm event.

Year	Annual $H_s$ exceedance* (m)						Annual Maximum $H_s$	
	0.05%	0.5%	1%	2%	5%	10%	Date	$A_{max}$ (m)
2007	-	-	-	1.63	1.34	1.10	20-Jun-2007 09:00	2.96
2008	3.91	2.6	2.28	1.93	1.54	1.22	13-Jan-2008 11:30	4.54

\* i.e. 5 % of the  $H_s$  values measured in 2007 exceeded 1.34m

### Distribution plots

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

- Percentage of occurrence of  $H_s$ ,  $T_p$ ,  $T_z$  and Direction for 2008
- Percentage wave height exceedance
- Joint distribution of all parameters for 2008, given both as number of observations and as percentage of occurrence
- Cumulative joint distribution of parameters from start of records (percentage of occurrence only)
- Incidence of storms in 2008. Storm events are defined using the Peaks-over-Threshold method. The highest  $H_s$  of each storm event is shown. Annual time series of  $H_s$  (red line is storm threshold).

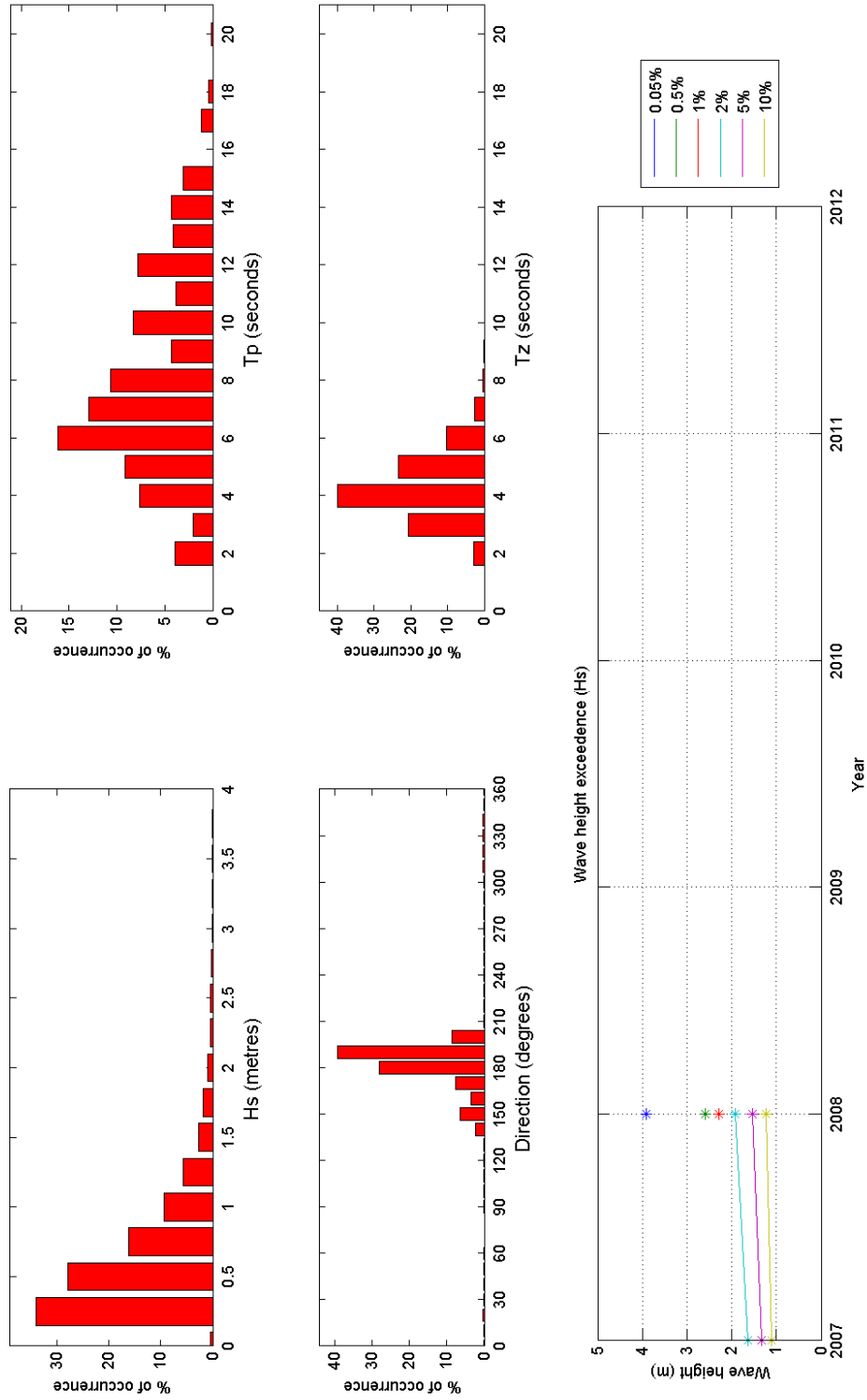
### General

The Directional Waverider buoy was first deployed on 5 April 2007.

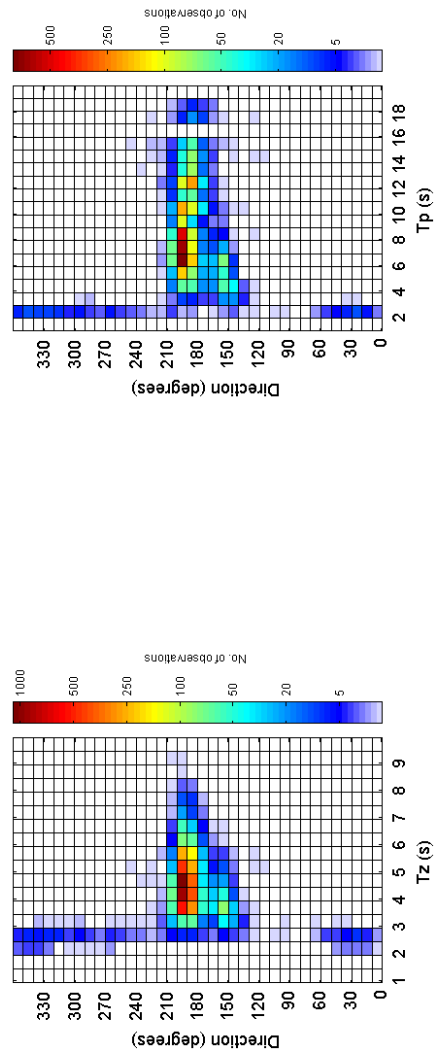
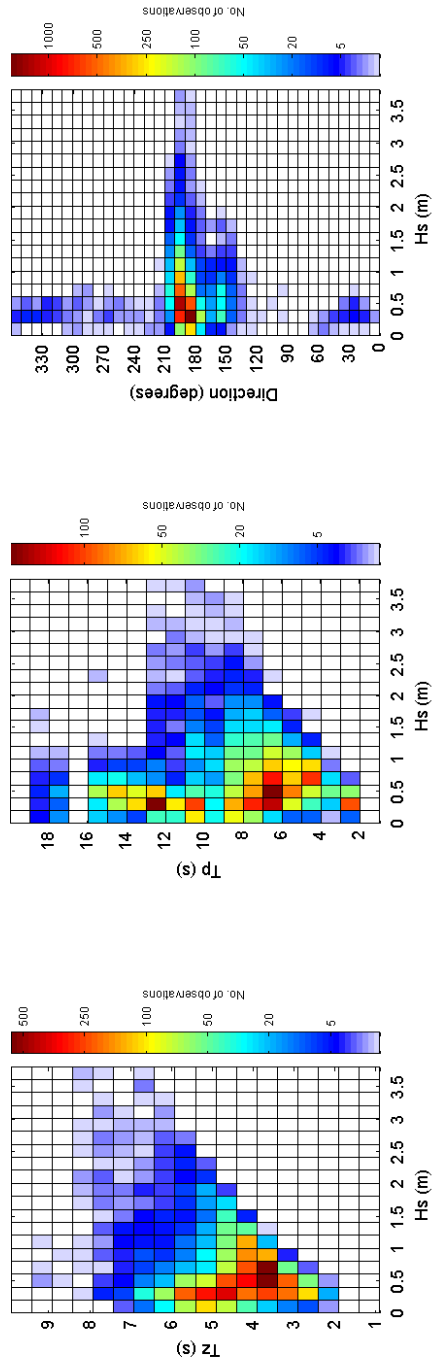
### Acknowledgements

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.

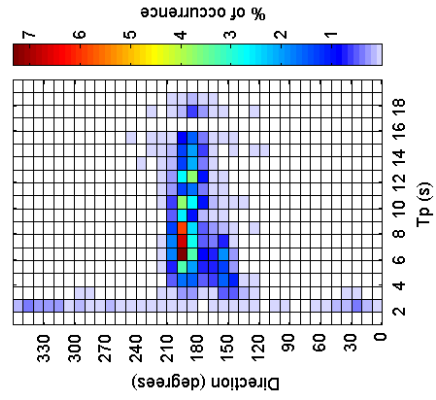
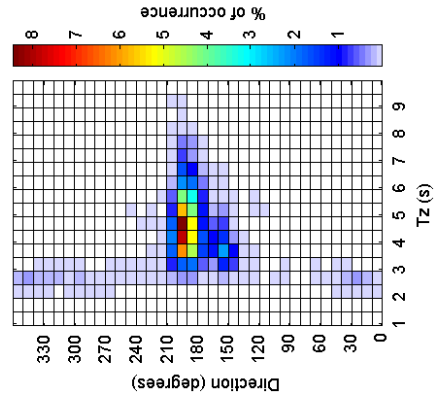
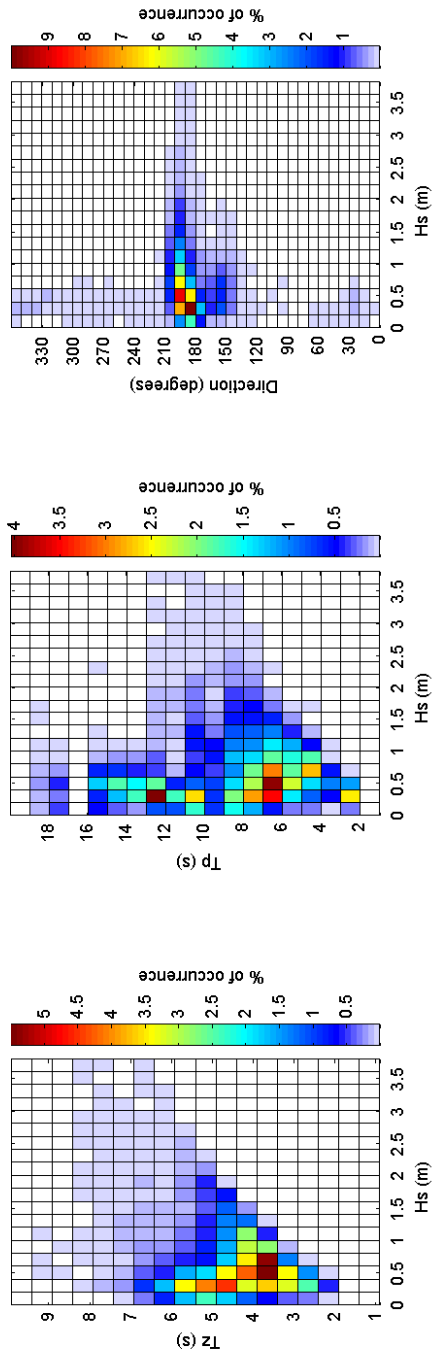
Penzance 2008



Penzance 2008 - Joint distribution



Penzance 2008 - Joint distribution (% of occurrence)



Penzance 2007 to 2008 - Joint distribution (% of occurrence)

