

Minehead Directional Waverider Buoy

Location

OS: E 297318 N 148742

WGS84: Latitude: 51° 13.72' N Longitude: 003° 28.32' W

Water Depth

Approx. 10m CD

Instrument Type

Datwell Directional Waverider Mk III

Data Quality

C1(%)	Sample interval
51	30 minutes

Monthly Means

All times GMT

Month	H _s	T _p	T _z	Direction	SST	No. of days
	(m)	(s)	(s)	(°)	(°C)	
January	0.83	7.3	4.6	288	8.2	31
February	0.59	6.9	4.0	234	8.0	29
March	0.86	6.4	4.3	280	8.2	31
April	-	-	-	-	-	0
May	-	-	-	-	-	0
June	-	-	-	-	-	0
July	-	-	-	-	-	0
August	-	-	-	-	-	0
September	0.53	5.4	3.5	193	16.3	8
October	0.72	6.7	4.4	290	14.3	31
November	0.73	5.9	4.0	270	10.8	28
December	0.63	6.6	4.2	248	8.3	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 _s	T _p	T _z	Dir.	Water level elevation (OD)	Tidal stage (hours re. HW)	Tidal range (m)	Tidal surge* (m)	Max. surge* (m)
10-Mar-2008 23:00	2.77	7.7	7.0	307	-0.5	HW +3	9.7	0.10	0.75
01-Mar-2008 02:30	2.47	5.9	5.6	293	-0.5	HW +3	2.5	0.00	0.50
07-Jan-2008 06:00	2.43	10.0	5.2	308	3.2	HW +1	5.9	0.10	0.45

* Tidal information is obtained from the nearest recording tide gauge (the National Network gauge at Ilfracombe). 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.

Year	Annual H_s exceedance* (m)						Annual Maximum H_s	
	0.05%	0.5%	1%	2%	5%	10%	Date	A_{max} (m)
2007	2.36	2.00	1.84	1.67	1.38	1.09	02-Dec-2007 21:00	2.55
2008	2.70	2.17	2.01	1.78	1.5	1.27	10-Mar-2008 23:00	2.77

* i.e. 5 % of the H_s values measured in 2007 exceeded 1.38m

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 (all recorded years)
- 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 and for all previous years. Storm events are defined using the Peaks-over-Threshold method
- Annual time series of H_s (red line is storm threshold)

General

The Waverider was first deployed on 19 December 2006. The buoy came adrift on 17 April 2008. Despite several days searching, the buoy could not be found. It was later recovered from a field in north Somerset, severely damaged. A spare buoy was deployed on 23 August.

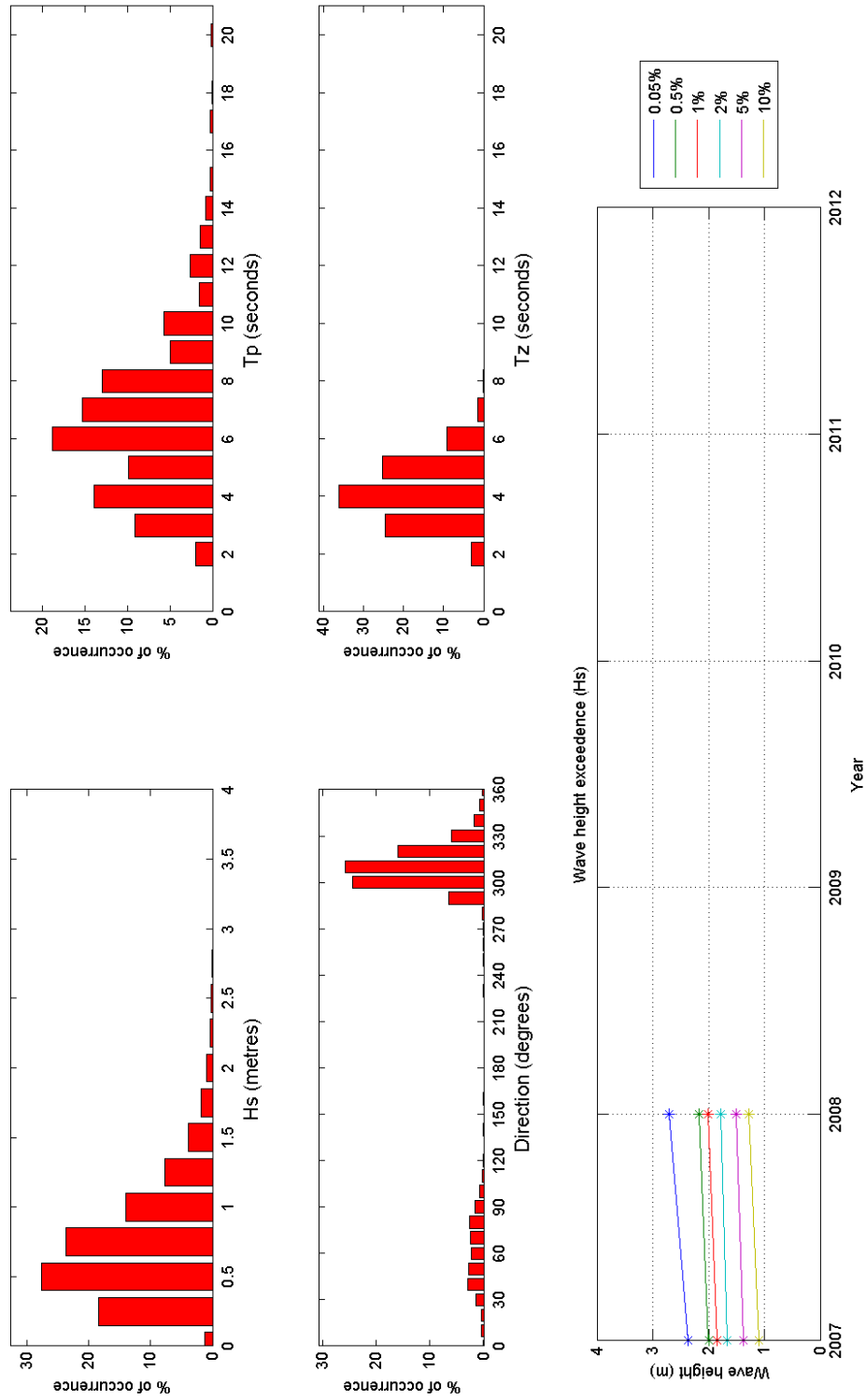
Damaged Minehead Waverider (photo courtesy of EMU Limited). Although the hull and most of the electronics were written off, Datawell found the HIPPY sensor to be serviceable.



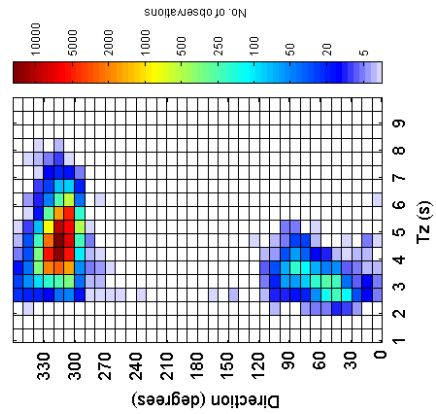
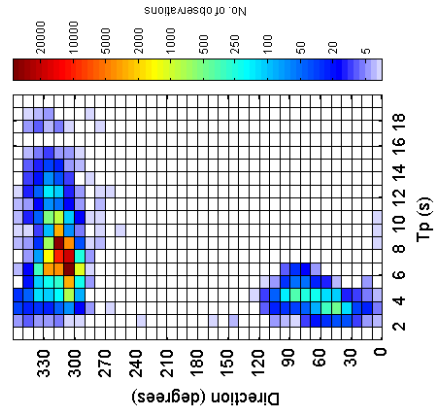
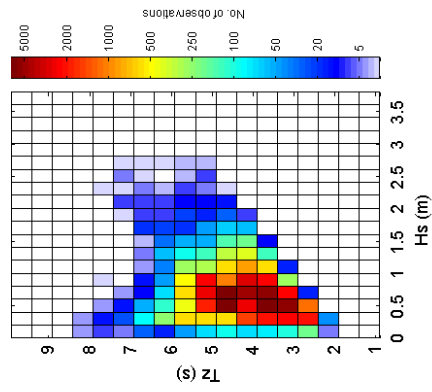
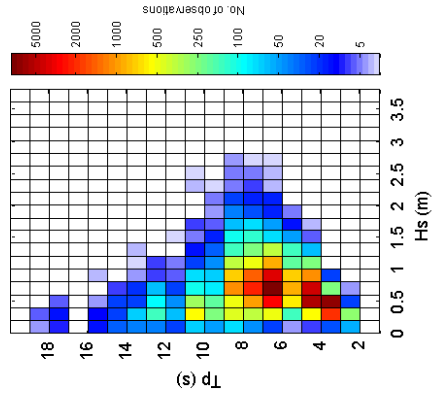
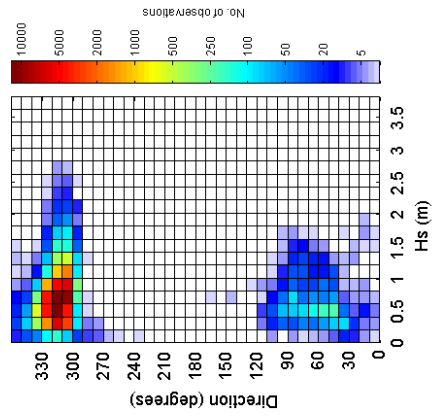
Acknowledgements

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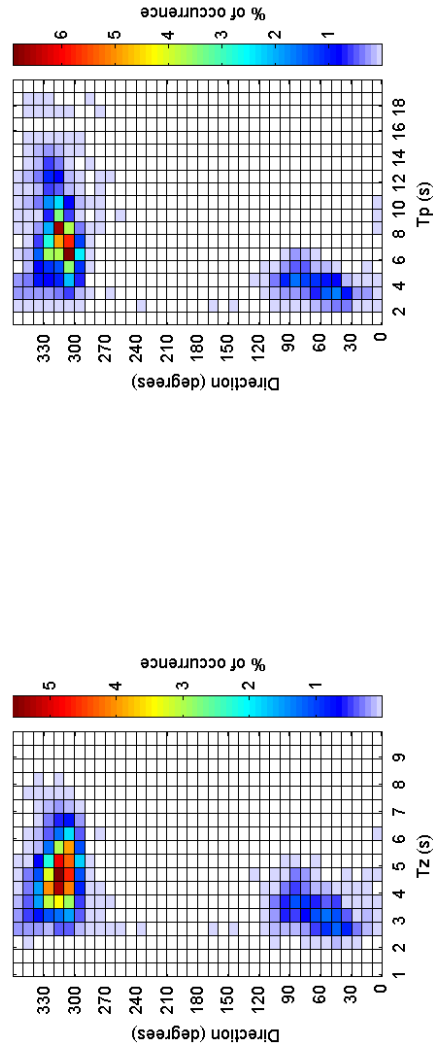
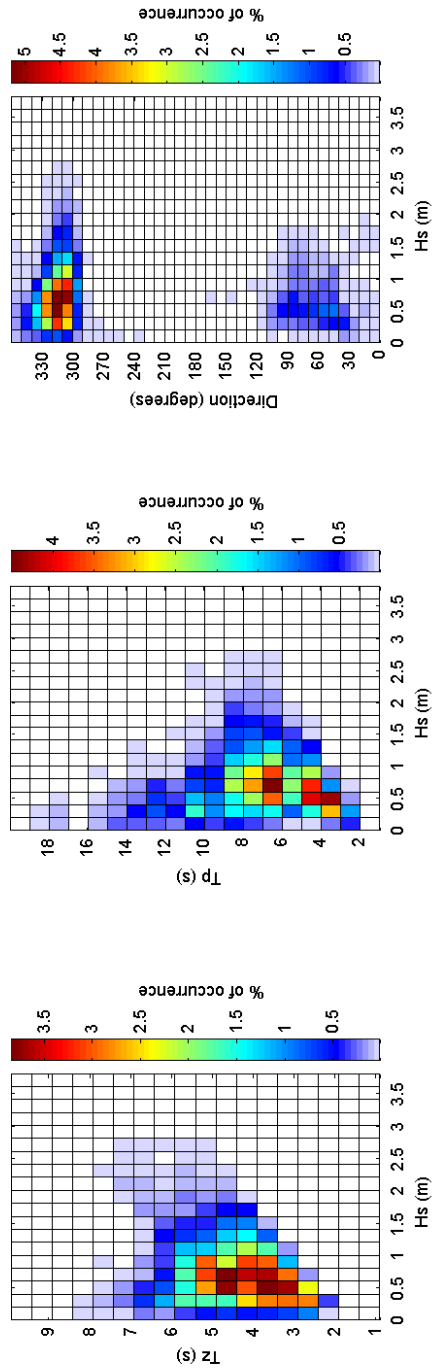
Minehead 2008



Minehead 2008 - Joint distribution



Minehead 2008 - Joint distribution (% of occurrence)



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

