

Bideford Bay Directional Waverider Buoy

Location

OS: 240537E 131225N
 WGS84: Latitude: 51° 03.490' N Longitude: 004° 16.610' W

Water Depth

Approx. 10m CD

Instrument Type

Datowell Directional Waverider Buoy Mk III

Data Quality

C1 (%)	Sample interval
99	30 minutes

Monthly Means

All times GMT

Month	H _s	T _p	T _z	Direction	SST	No. of days
	(m)	(s)	(s)	(°)	(°C)	
January	1.12	11.4	6.0	287	7.7	31
February	1.03	12.3	5.9	285	7.1	27
March	0.86	11.1	5.4	283	7.4	30
April	0.78	10.2	5.5	277	9.0	30
May	0.65	9.8	5.1	287	11.7	31
June	0.74	9.8	5.9	284	15.0	30
July	0.98	8.7	5.1	282	17.1	31
August	0.83	7.1	4.3	287	17.6	31
September	0.98	10.1	5.5	284	16.5	30
October	1.06	9.9	5.5	284	14.7	31
November	1.27	10.5	5.6	283	12.2	29
December	0.73	9.3	5.0	294	8.4	30

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 2010									
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)
11-Nov-2010 20:30	6.20	11.8	8.9	280	3.00	HW -1	5.10	0.35	0.72
31-Mar-2010 03:30	5.18	10.0	7.8	283	0.20	HW -3	9.25	0.05	0.25
08-Nov-2010 14:00	4.02	10.5	8.9	280	-3.30	HW -5	8.35	0.10	0.20

* 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)
2009	5.06	4.26	3.90	3.58	3.10	2.58	22-Nov-2009 17:00	5.29
2010	5.16	3.07	2.77	2.43	2.03	1.66	11-Nov-2010 20:30	6.20

* i.e. 5 % of the H_s values measured in 2009 exceeded 3.1m.

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 2010
- Joint distribution of all parameters for 2010, given both as number of observations and as percentage of occurrence
- Wave roses (Direction vs. H_s and vs. T_p) for all measured data
- Incidence of storm waves for 2010. 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)

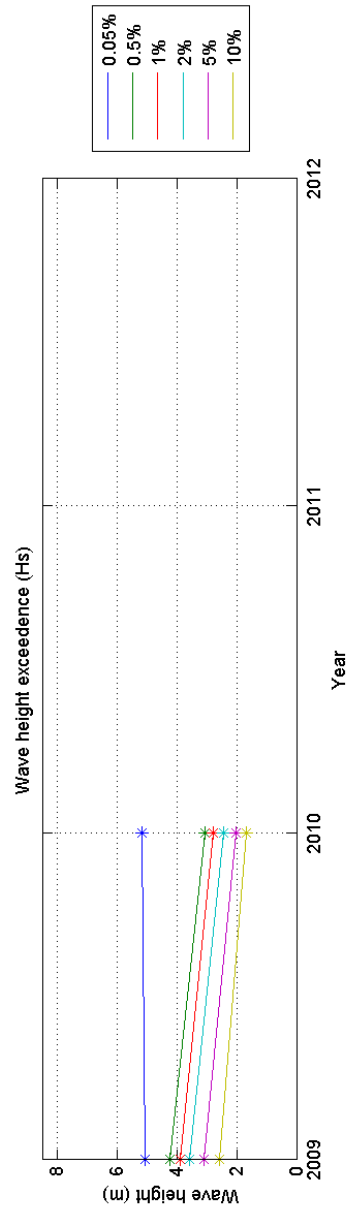
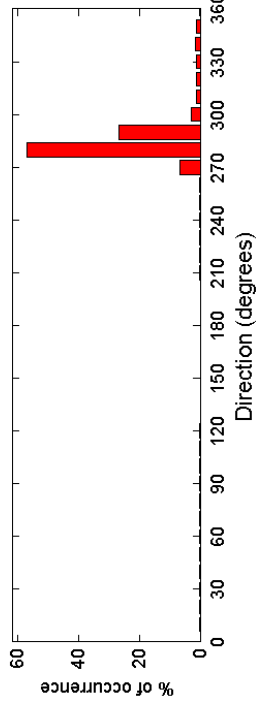
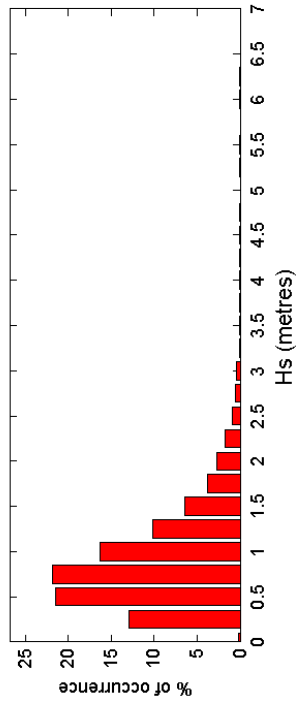
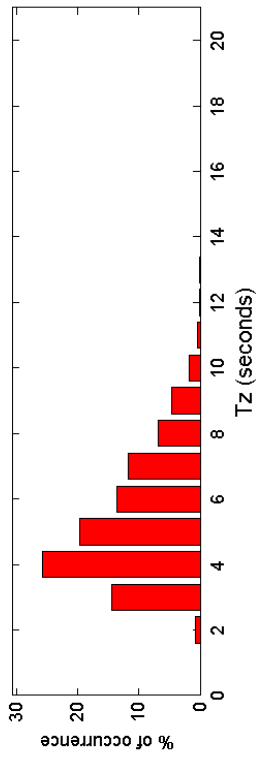
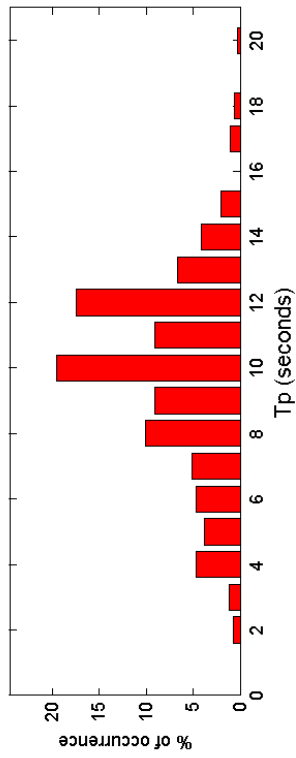
General

The buoy, owned by the Environment Agency (Southwest Region), was first deployed on 17 June 2009.

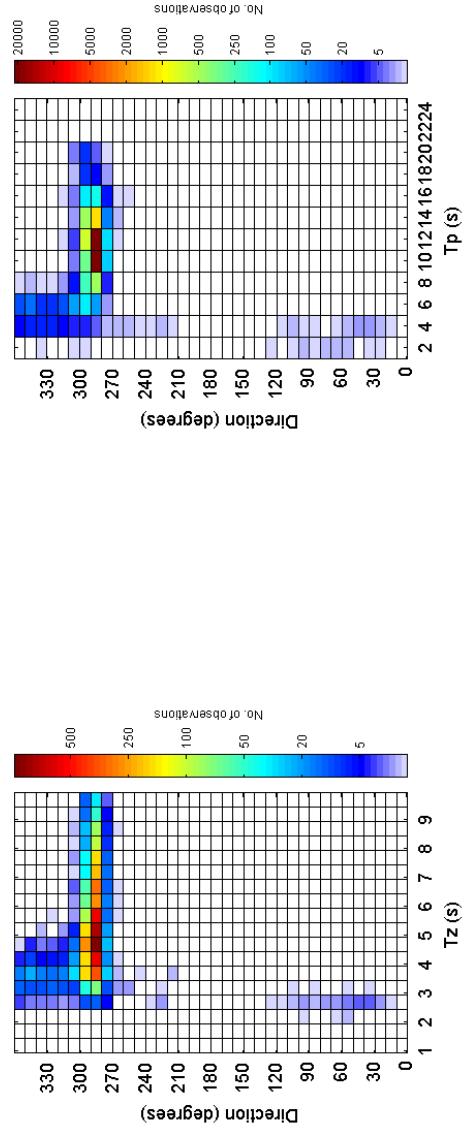
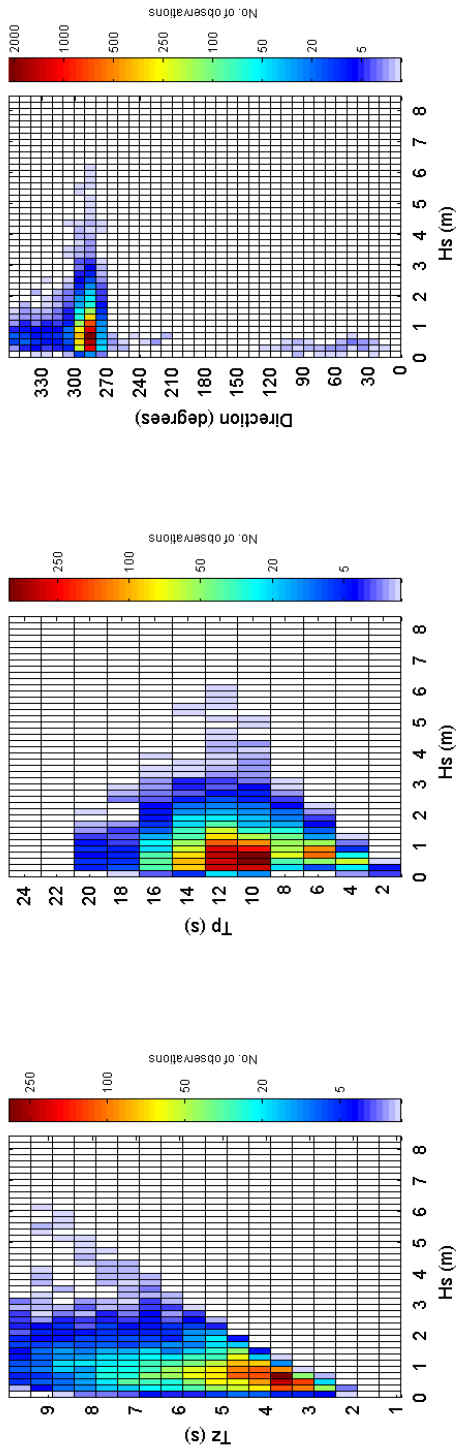
Acknowledgements

The shore station is sited at Braddick's Holiday Park, by kind permission of Mr Braddick. 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.

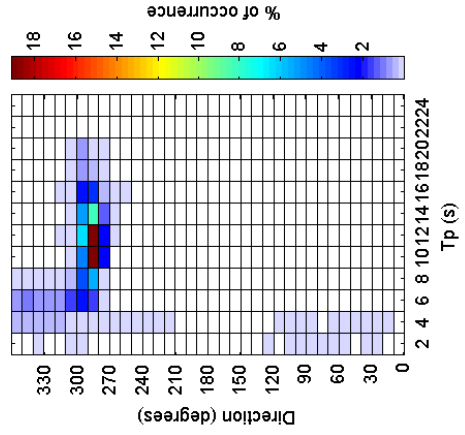
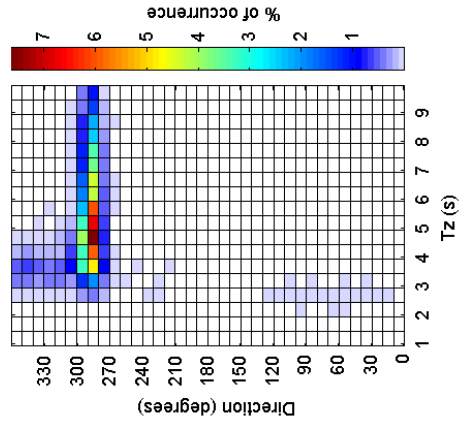
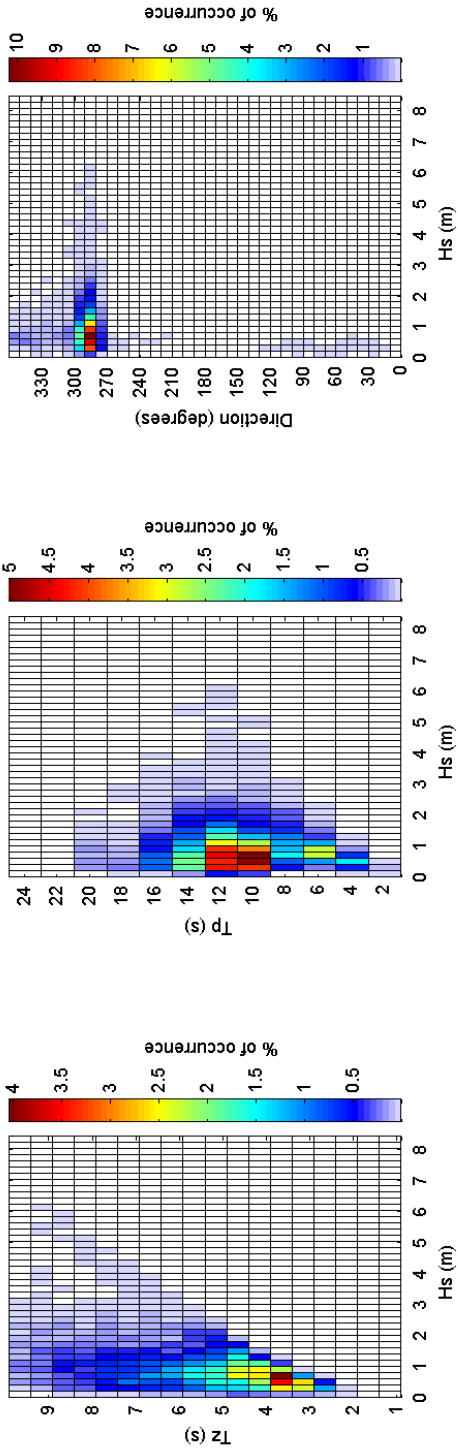
Bideford Bay 2010

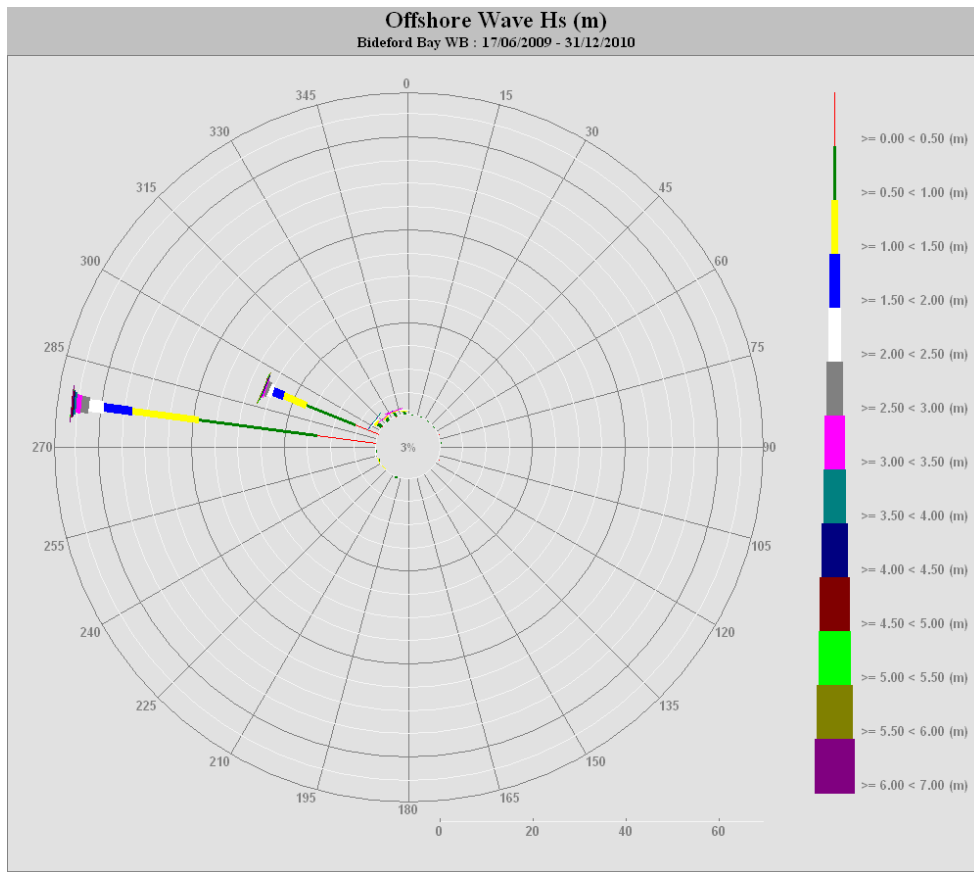


Bideford Bay 2010 - Joint distribution

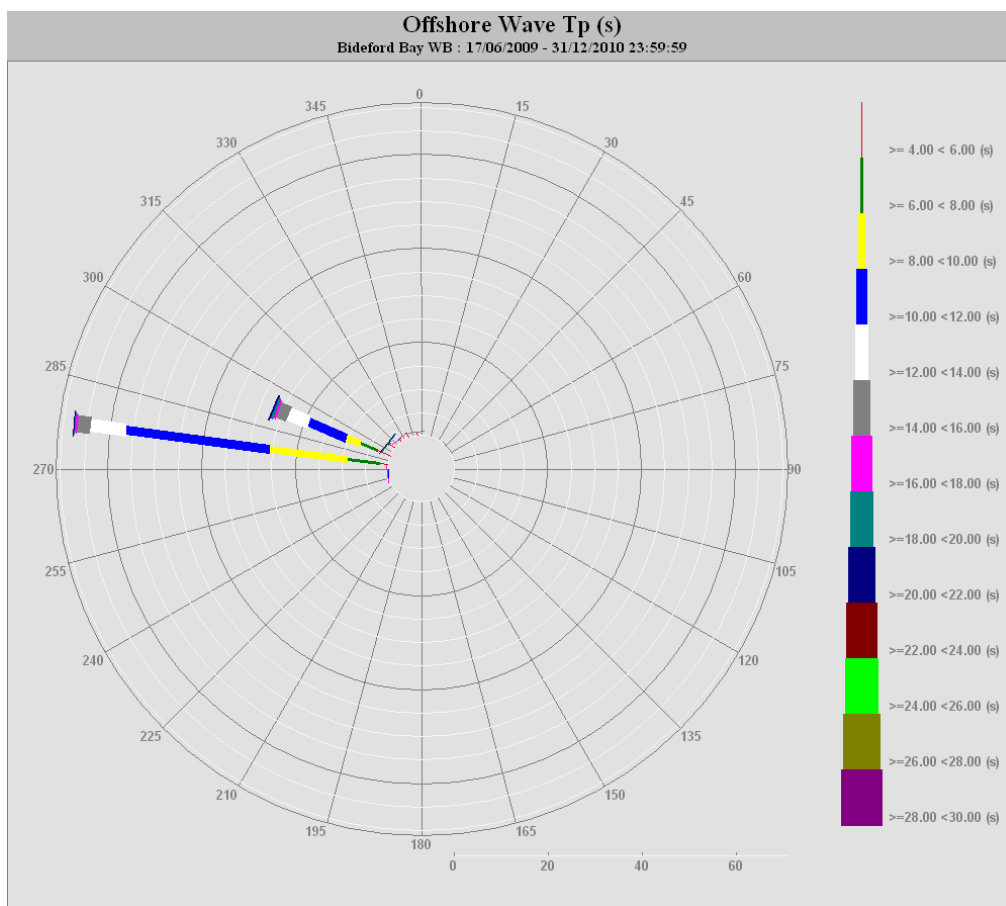


Bideford Bay 2010 - Joint distribution (% of occurrence)





Direction vs. H_s (all measured data)



Direction vs. T_p (all measured data)

