

Start Bay Directional Waverider Buoy

Location

OS: 284870E 44683N
 WGS84: Latitude: 50° 17.45' N Longitude: 003° 37.06' W

Water Depth

Approx. 10m CD

Instrument Type

Datowell Directional Waverider Mk III

Data Quality

C1 (%)	Sample interval
96	30 minutes

Monthly Means

All times GMT

Month	H _s	T _p	T _z	Direction	SST	No. of days
	(m)	(s)	(s)	(°)	(°C)	
January	0.98	8.7	5.1	147	8.2	30
February	0.91	9.3	4.8	155	7.6	27
March	0.92	8.6	4.6	153	7.3	31
April	0.60	8.5	4.4	153	9.0	30
May	0.47	7.1	4.1	142	10.8	31
June	0.42	8.4	4.2	151	13.9	30
July	0.43	7.4	4.1	173	15.0	31
August	0.48	6.5	4.0	162	16.1	20
September	0.55	7.9	4.1	161	16.4	30
October	0.91	7.3	4.3	144	15.1	31
November	0.98	8.3	4.8	149	13.0	30
December	0.88	7.4	4.5	133	9.4	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)
16-Jan-2010 05:30	3.73	8.3	6.5	162	1.89	HW -1	3.41	0.43	0.48
12-Jan-2010 18:00	3.60	8.3	6.2	142	1.34	HW +1	2.29	0.44	0.44
17-Nov-2010 08:00	3.55	8.3	6.3	148	-0.06	HW +5	1.72	0.44	0.57

* Tidal information is obtained from the nearest recording tide gauge (the WaveRadar Rex on Teignmouth Pier). 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	-	-	1.93	1.71	1.43	1.15	17-Dec-2007 23:30	3.41
2008	3.60	2.98	2.66	2.34	1.78	1.38	17-Apr-2008 20:30	3.94
2009	3.19	2.67	2.44	2.21	1.83	1.47	01-Feb-2009 09:00	3.36
2010	3.53	2.5	2.21	2.05	1.72	1.43	16-Jan-2010 05:30	3.73

* i.e. 5 % of the H_s values measured in 2007 exceeded 1.43m

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
- Percentage wave height exceedance (all recorded years)
- Joint distribution of all parameters for 2010, given both as number of observations and as percentage of occurrence. Note that statistics for 2007 are based on April to December only.
- Cumulative joint distribution of parameters from start of records (percentage of occurrence only)
- Wave roses (Direction vs. H_s and vs. T_p) for all measured data
- Incidence of storms during 2010 and for all previous years. Storms are defined using the Peaks-over-Threshold method. The highest H_s of each storm is shown.
- Annual time series of H_s (red line is storm threshold)

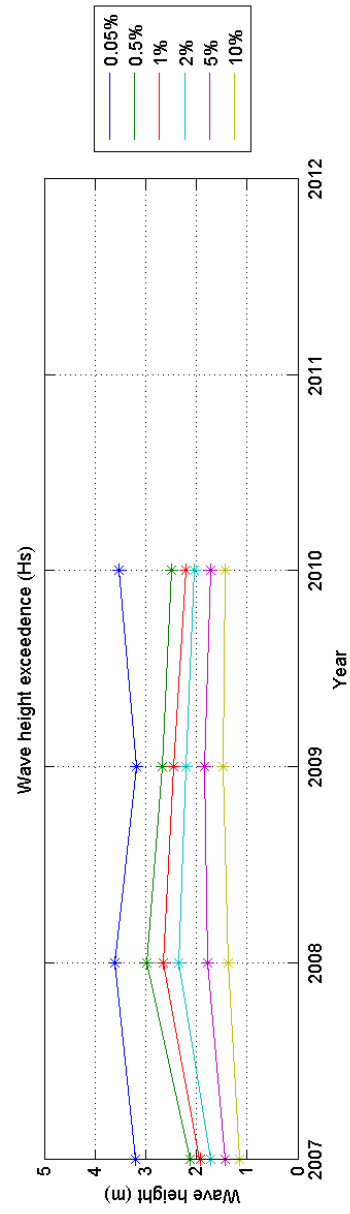
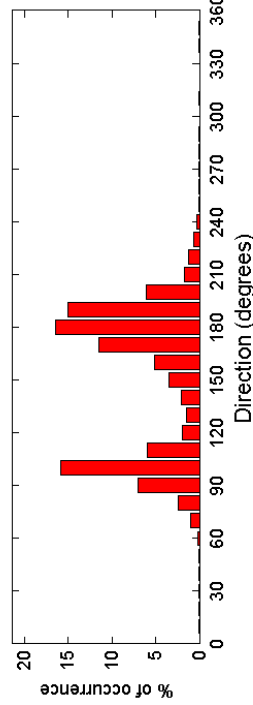
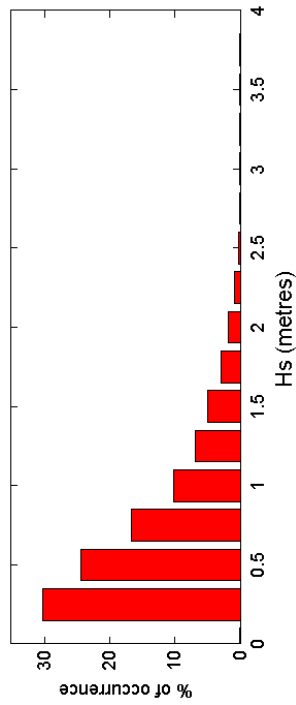
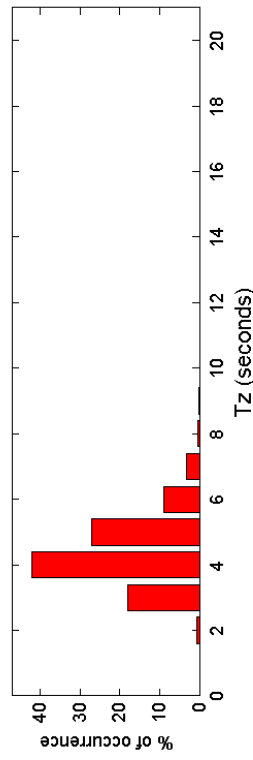
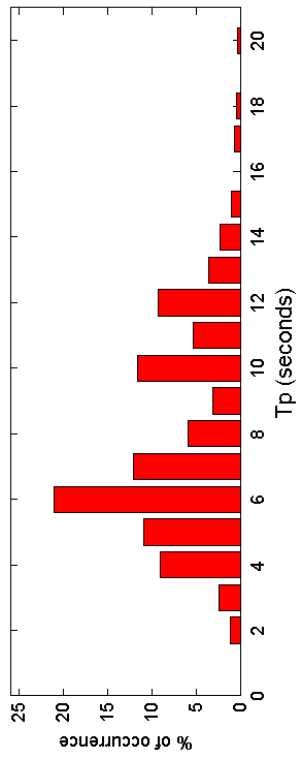
General

The buoy was first deployed on 4 April 2007.

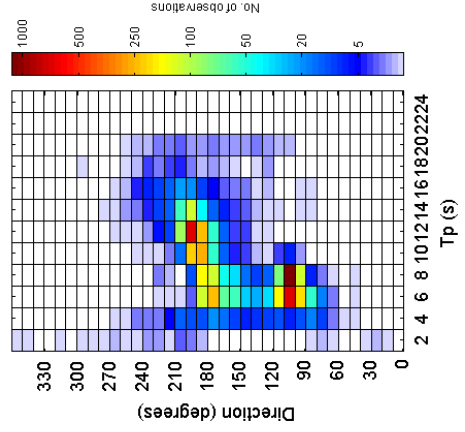
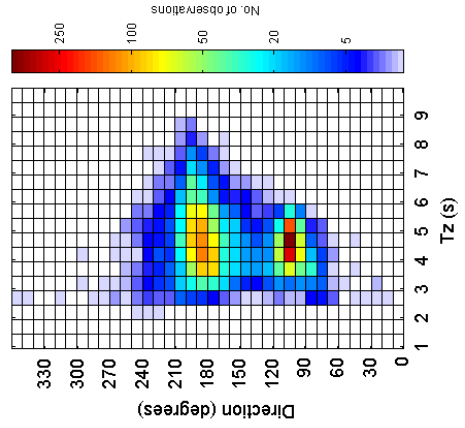
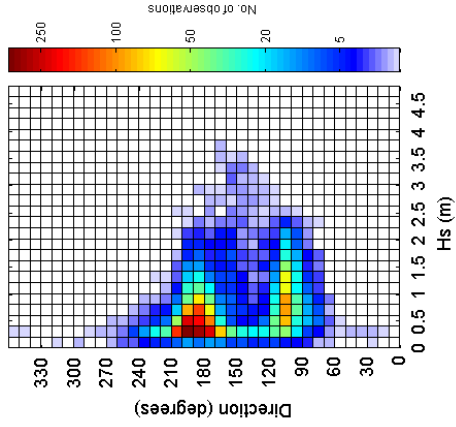
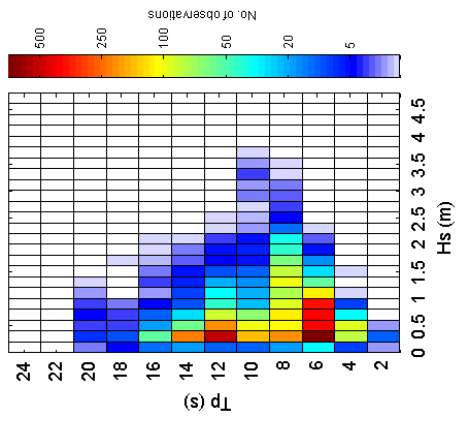
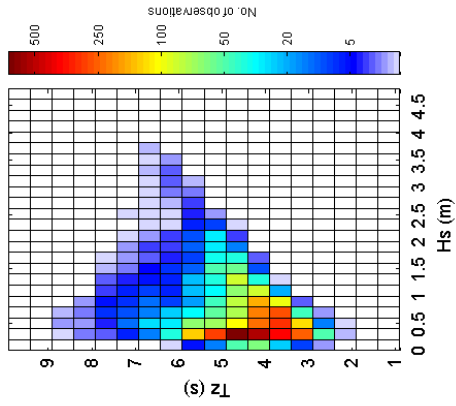
Acknowledgements

TASK2000 tidal prediction software was kindly provided by the Permanent Service for Mean Sea Level, Proudman Oceanographic Laboratory.

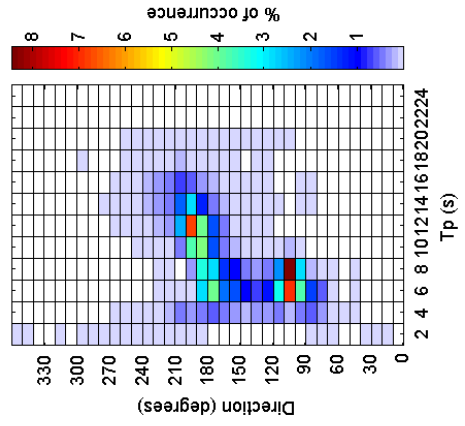
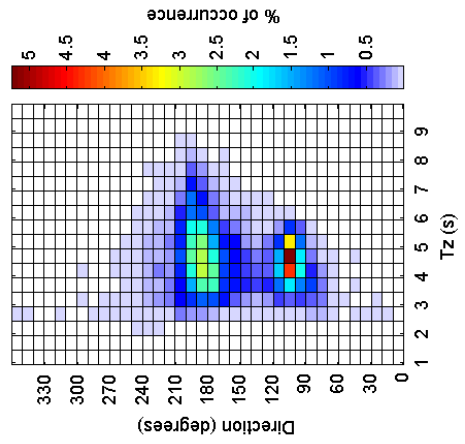
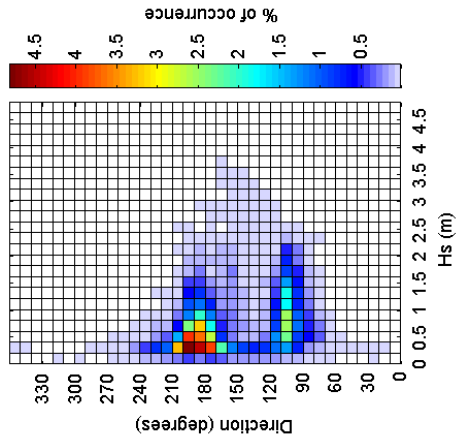
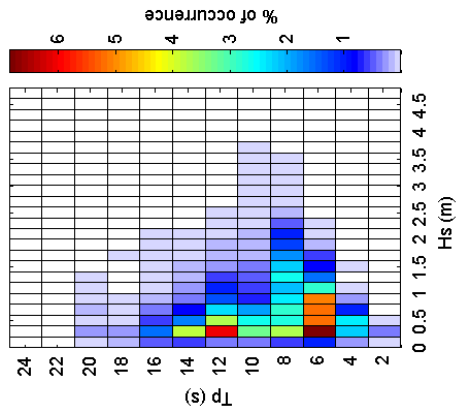
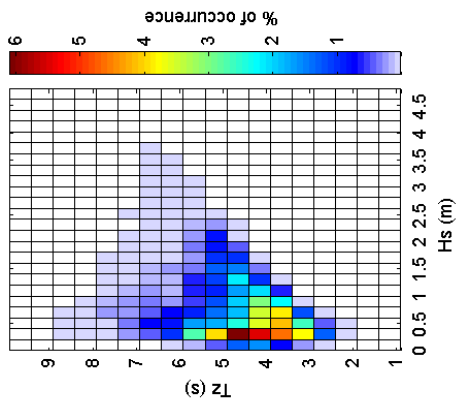
Start Bay 2010



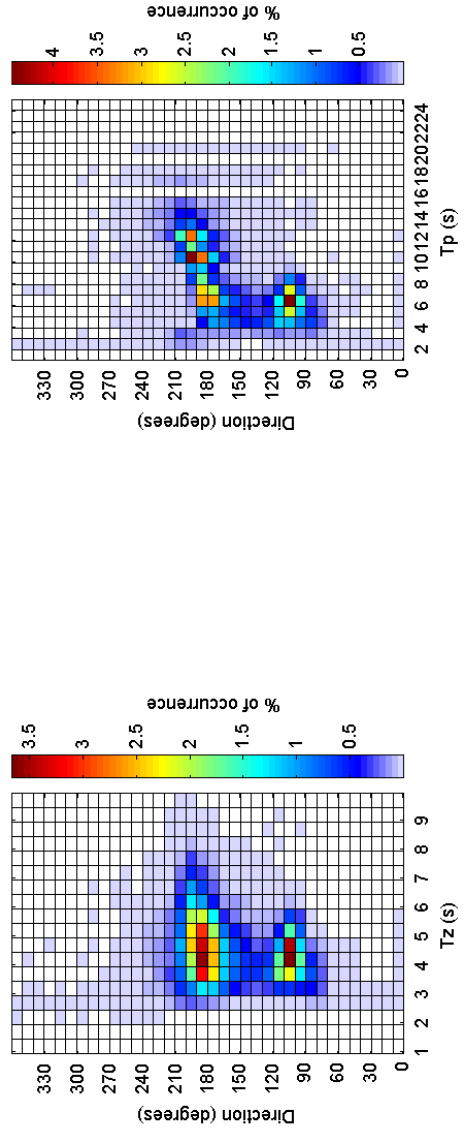
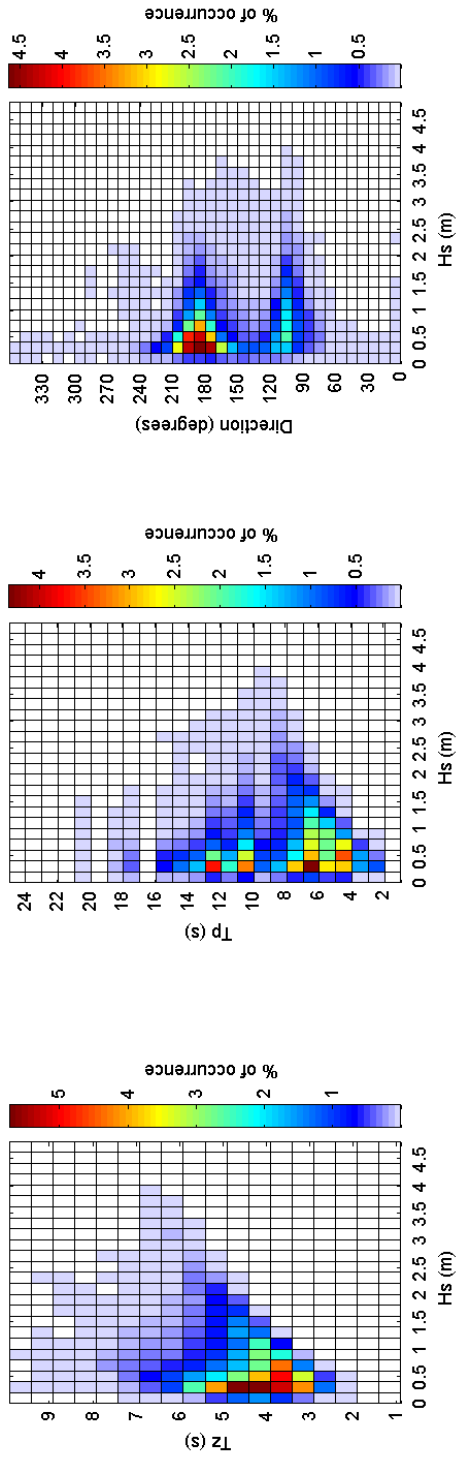
Start Bay 2010 - Joint distribution

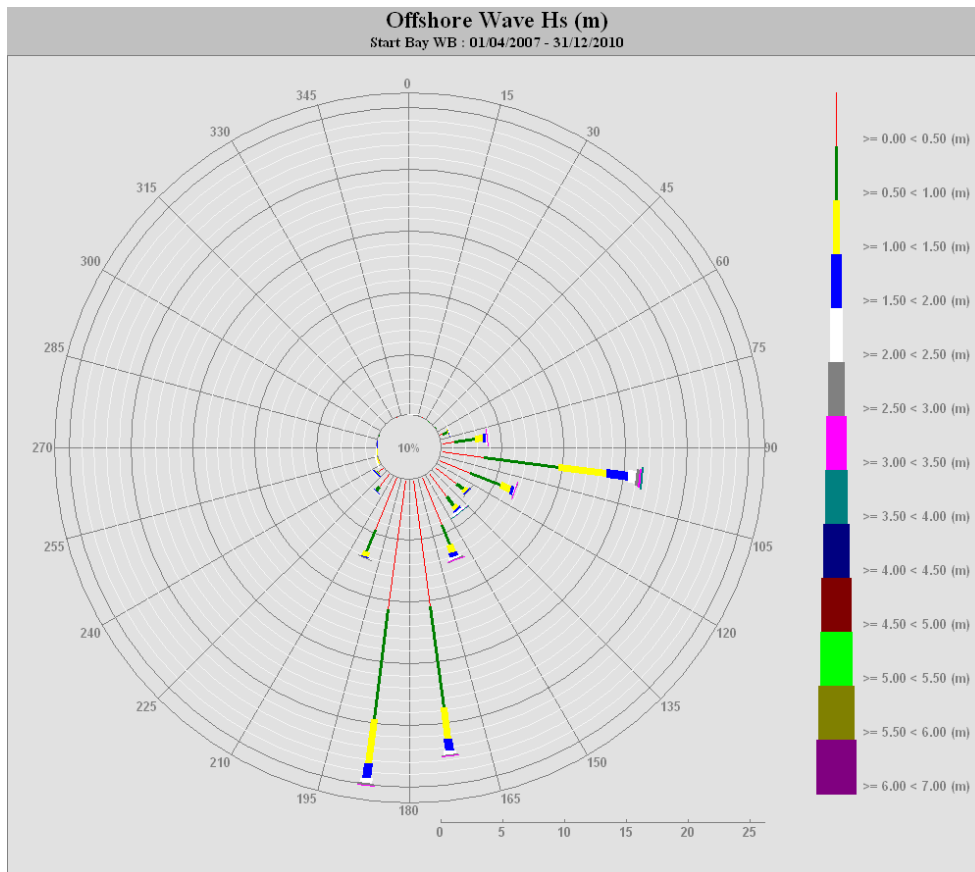


Start Bay 2010 - Joint distribution (% of occurrence)

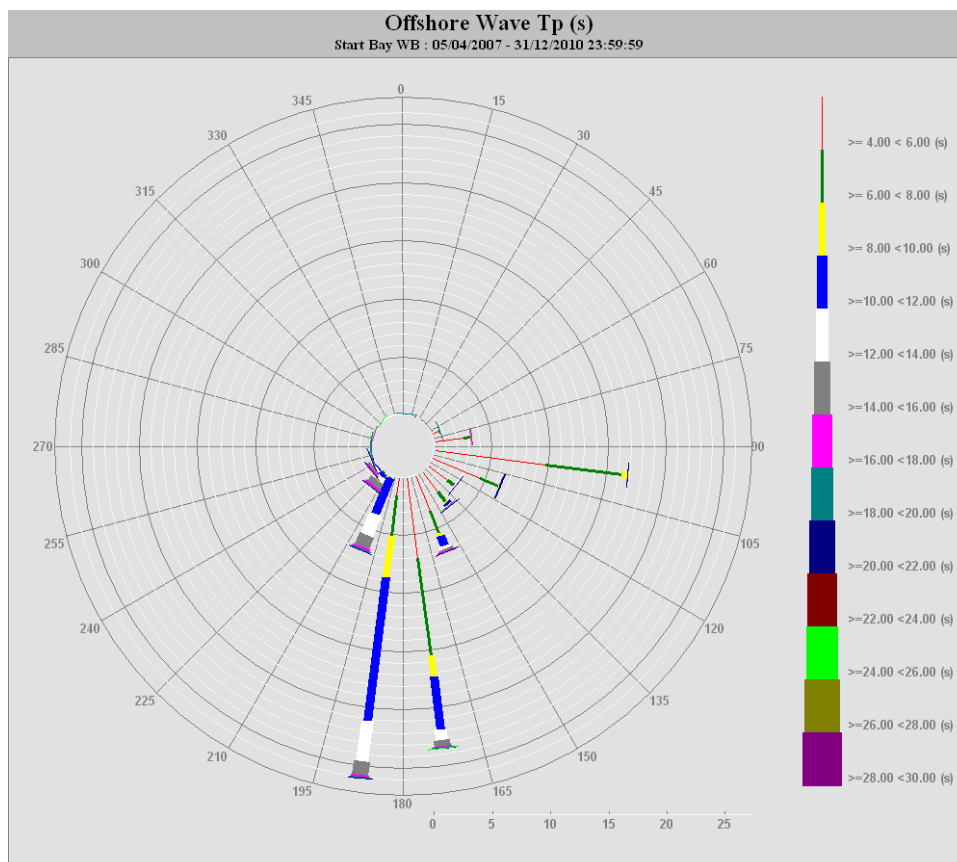


Start Bay 2007 to 2010 - Joint distribution (% of occurrence)





Direction vs. H_s (all measured data)



Direction vs. T_p (all measured data)

