

Chesil Directional Waverider Buoy

Location

OS: 363079E 78233N
 WGS84: Latitude: 50° 36.157'N Longitude: 002° 31.384'W

Water Depth

Approx. 12m CD

Instrument Type

Datawell Directional Waverider Buoy Mk III

Data Quality

C1 (%)	Sample interval
98	30 minutes

Monthly Means

All times GMT

Month	H _s	T _p	T _z	Direction	SST	No. of days
	(m)	(s)	(s)	(°)	(°C)	
January	0.87	10.4	5.4	216	6.9	31
February	1.05	11.2	5.8	218	6.5	28
March	0.90	10.0	5.1	214	6.8	31
April	0.64	8.8	5.0	209	8.6	29
May	0.47	8.2	4.5	211	10.8	31
June	0.47	8.9	4.7	211	13.5	27
July	0.76	6.4	4.0	226	16.6	31
August	0.79	6.1	4.0	225	16.8	30
September	0.79	8.7	4.2	219	16.8	30
October	1.00	7.6	4.9	215	14.8	31
November	1.11	8.7	5.2	209	12.1	30
December	0.71	8.6	5.1	210	7.2	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 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 09:30	4.40	9.1	6.9	218	1.42	HW	1.60	0.35	0.35
16-Jan-2010 08:00	4.03	9.1	6.8	210	1.49	HW	1.92	0.31	0.31
08-Nov-2010 06:30	3.98	8.3	6.3	211	1.67	HW -1	2.38	0.25	0.25

* Tidal information is obtained from the nearest recording tide gauge (the National Network gauge at Weymouth). 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	4.48	3.55	3.3	3.04	2.47	1.91	02-Dec-2007 11:00	4.87
2008	4.84	3.76	3.43	3.03	2.57	2.06	10-Mar-2008 13:00	5.37
2009	5.57	4.02	3.57	3.15	2.56	2.02	14-Nov-2009 14:00	6.95
2010	3.97	3.14	2.83	2.46	1.94	1.56	11-Nov-2010 09:30	4.40

* i.e. 5 % of the H_s values measured in 2007 exceeded 2.47m

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
- Cumulative joint distribution of parameters from start of records (percentage of occurrence only)
- Wave roses (Direction vs. for 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).

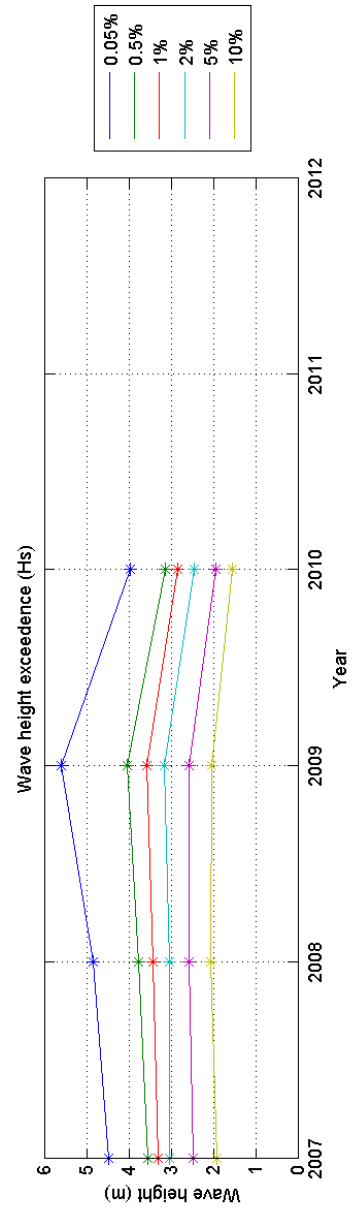
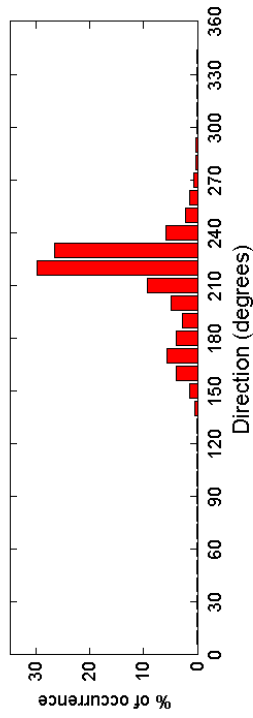
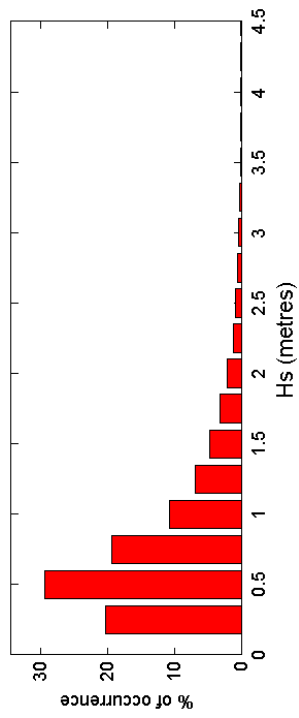
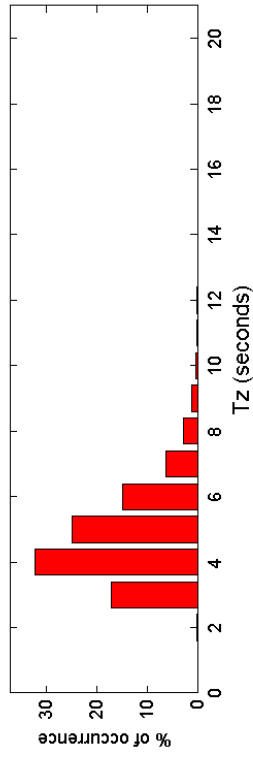
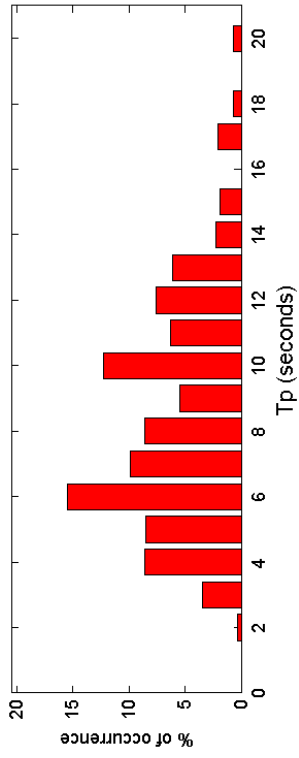
General

The wave buoy at Chesil was deployed on 22 December 2006.

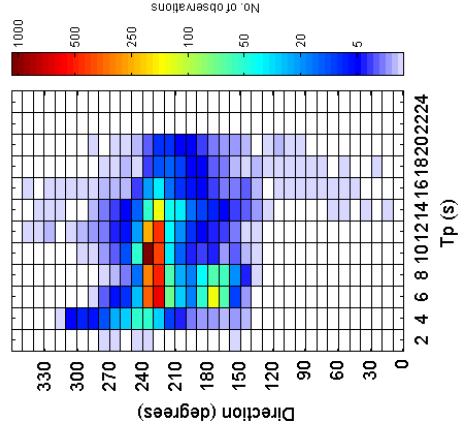
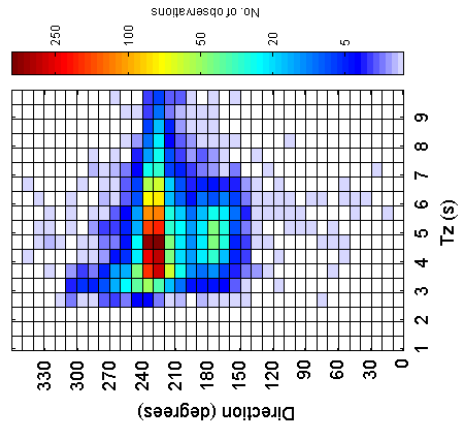
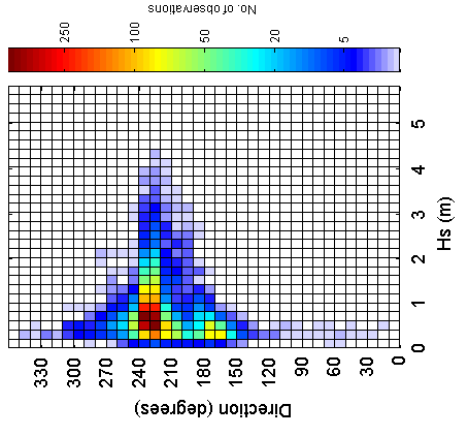
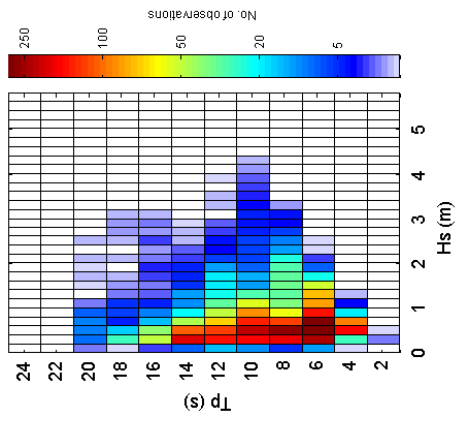
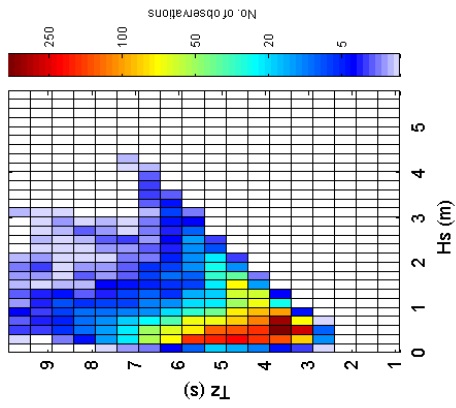
Acknowledgements

The shore station is kindly hosted by the Weymouth & Portland National Sailing Academy. 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.

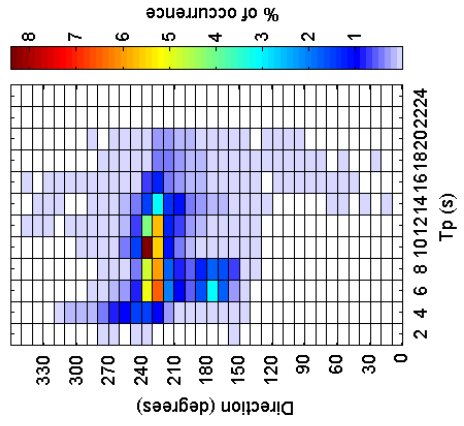
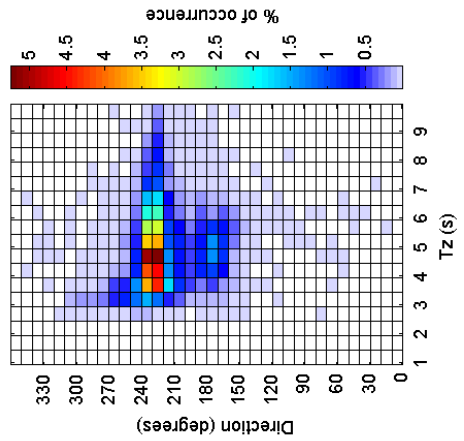
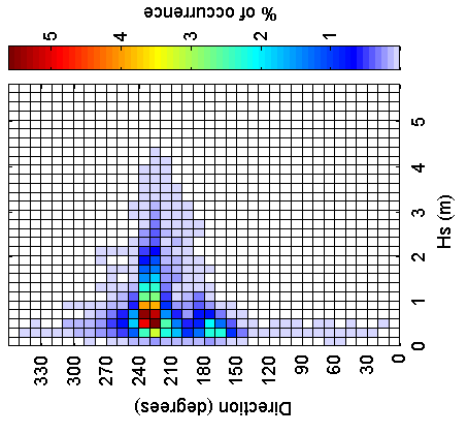
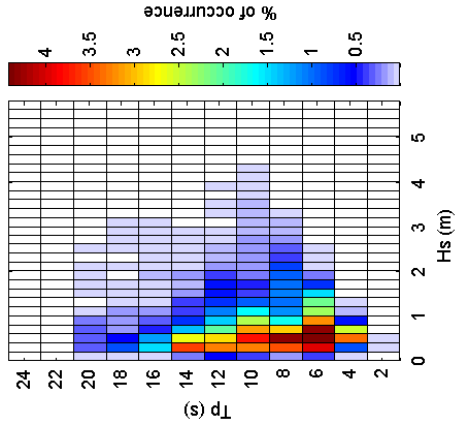
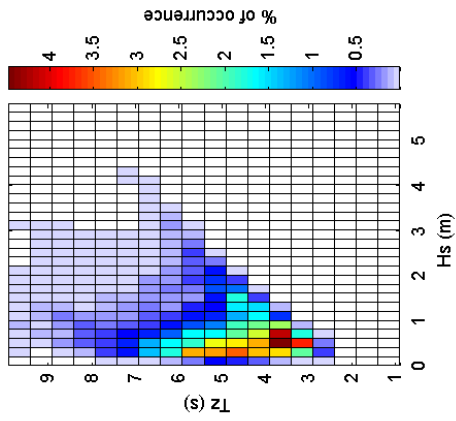
Chesil 2010



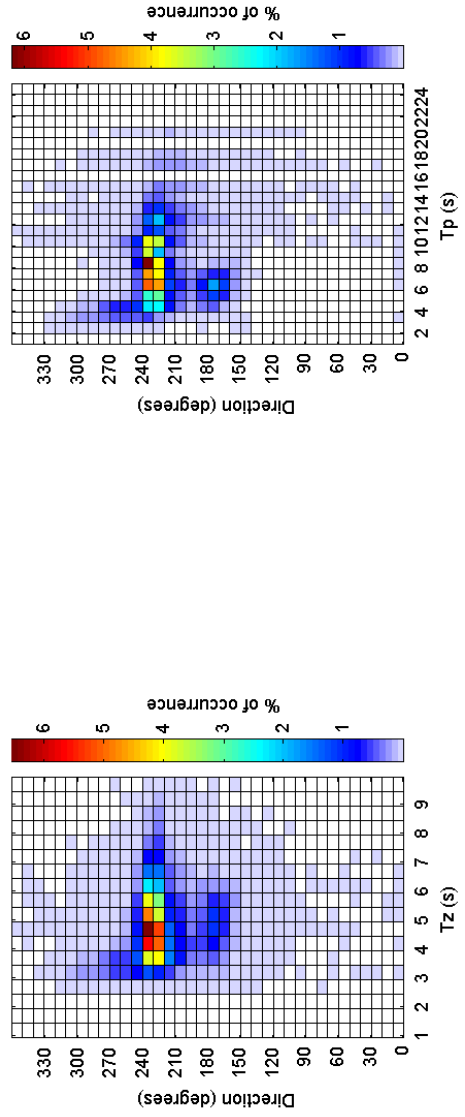
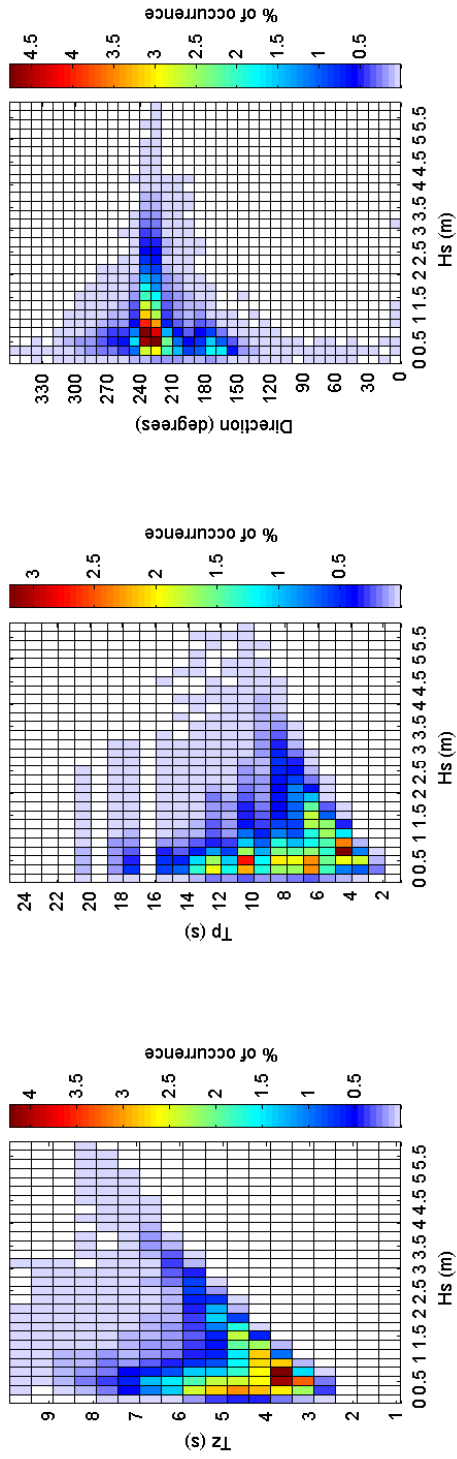
Chesil 2010 - Joint distribution

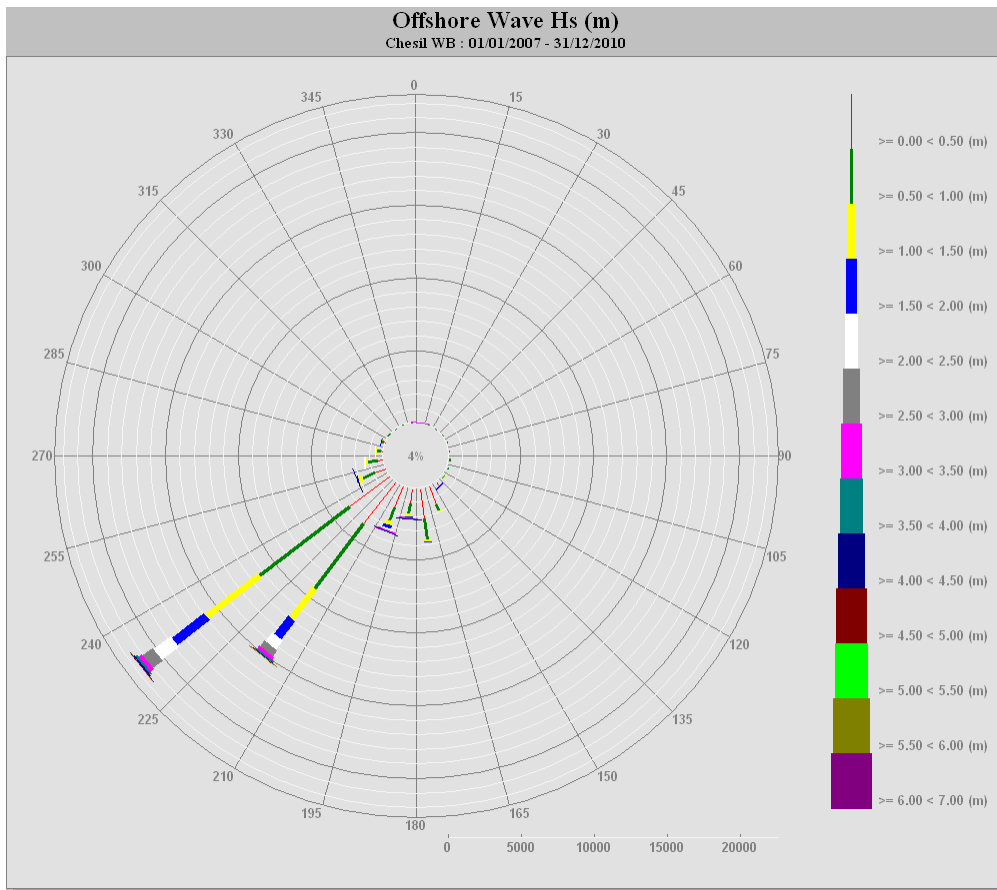


Chesil 2010 - Joint distribution (% of occurrence)

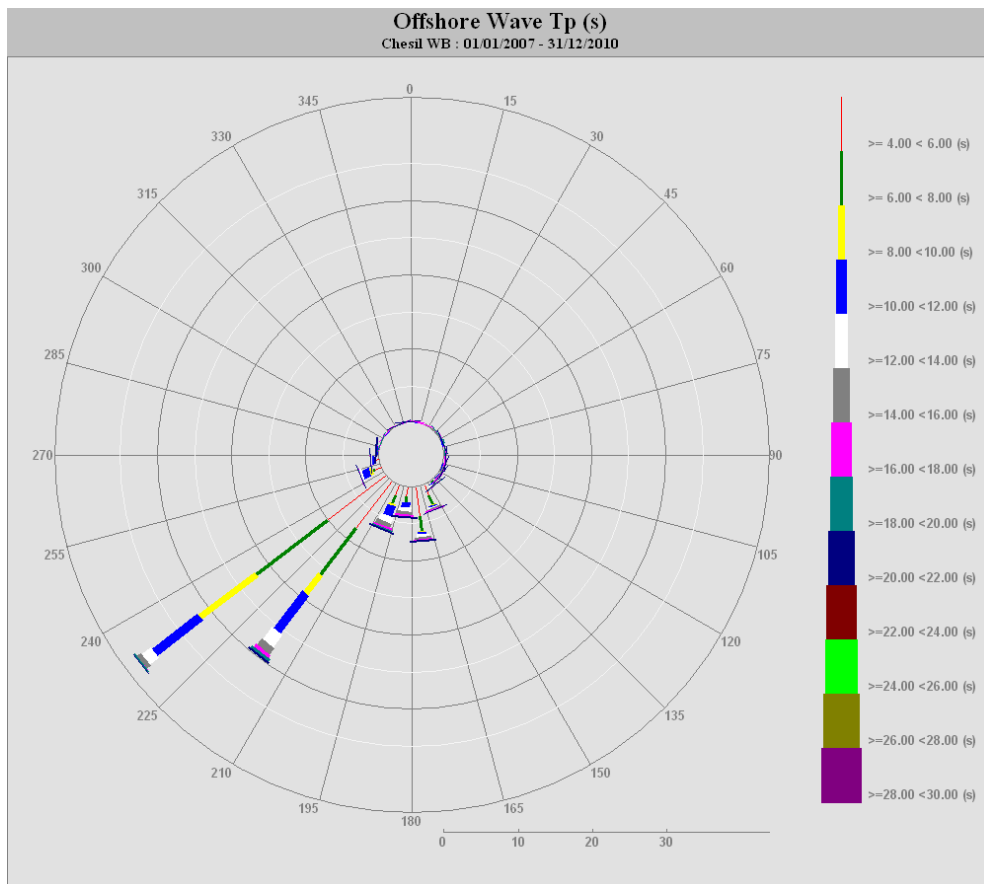


Chesil 2007 to 2010 - Joint distribution (% of occurrence)





Direction vs. H_s (all measured data)



Direction vs. T_p (all measured data)

