

## Weston Bay Directional Waverider Buoy

### Location

OS: 329183E 162109N

WGS84: Latitude: 51° 21.217' N Longitude: 003° 1.101' W

### Water Depth

Approx. 10m CD

### Instrument Type

Datawell Directional Waverider Mk III

### Data Quality

C1 (%)	Sample interval
30	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	-	-	-	-	-	-
February	-	-	-	-	-	-
March	-	-	-	-	-	-
April	-	-	-	-	-	-
May	-	-	-	-	-	-
June	-	-	-	-	-	-
July	-	-	-	-	-	-
August	-	-	-	-	-	-
September	0.31	3.6	2.9	196	16.4	20
October	0.32	4.3	3.1	232	14.7	31
November	0.77	5.1	3.6	241	11.6	29
December	0.43	4.3	3.2	206	7.6	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 2009									
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)
14-Nov-2009 15:30	2.42	6.7	4.7	264	4.50	HW -1	8.25	0	0.82
22-Nov-2009 23:00	2.40	5.9	4.9	263	3.40	HW +1	7.30	0.25	0.50

\* Tidal information is obtained from the nearest recording tide gauge (the National Network gauge at Hinkley Point). 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)
2009	2.38	1.71	1.59	1.42	1.20	1.02	14-Nov-2009 15:30	2.42

\* i.e. 5 % of the  $H_s$  values measured in 2009 exceeded 2.38m

### 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 2009
- Percentage wave height exceedance
- Joint distribution of all parameters for 2009, given both as number of observations and as percentage of occurrence
- Incidence of storms during 2009. 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)

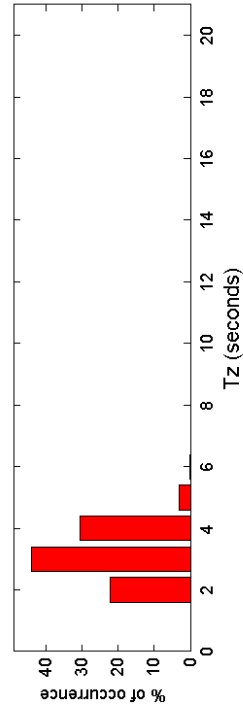
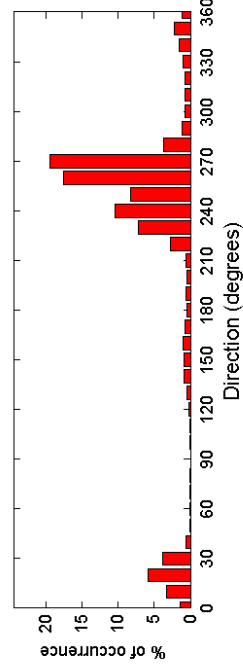
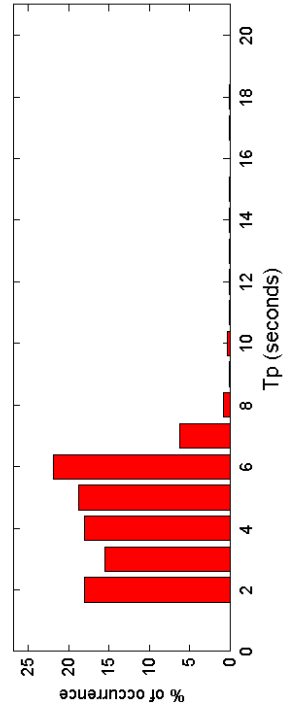
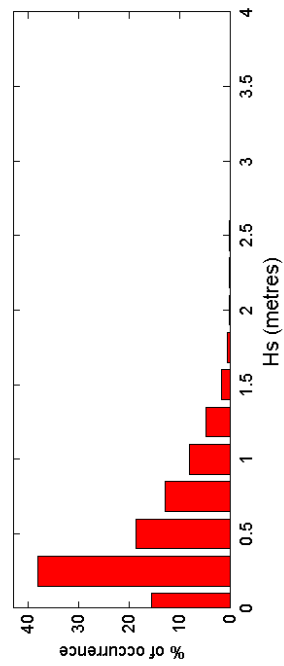
### General

The buoy, owned by the Environment Agency (Southwest Region), was deployed on 10 September 2009.

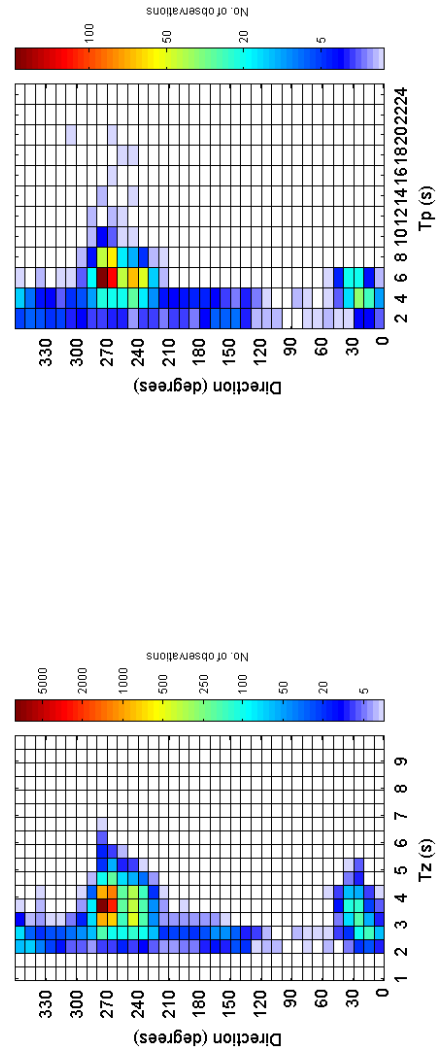
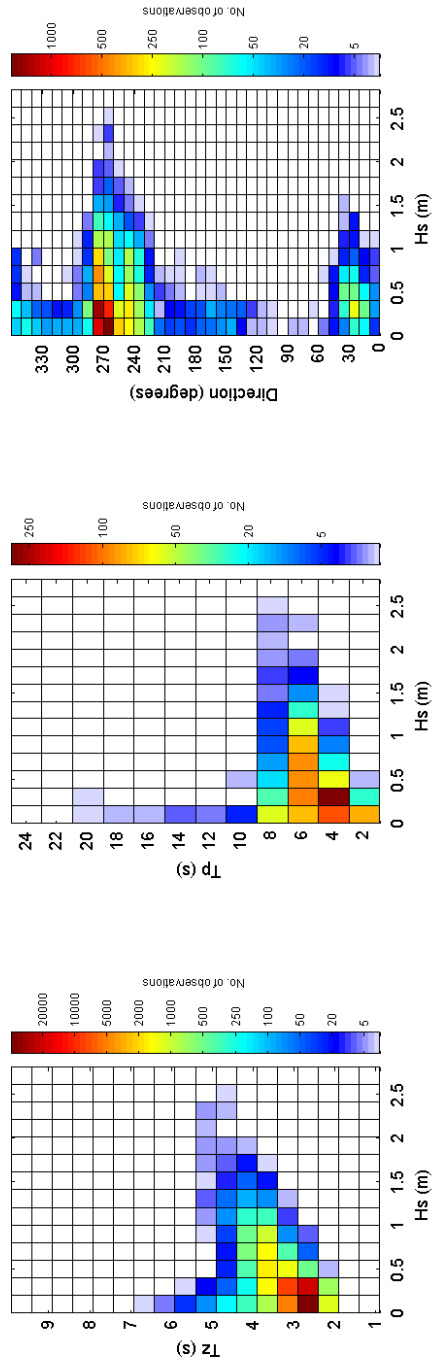
### Acknowledgements

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.

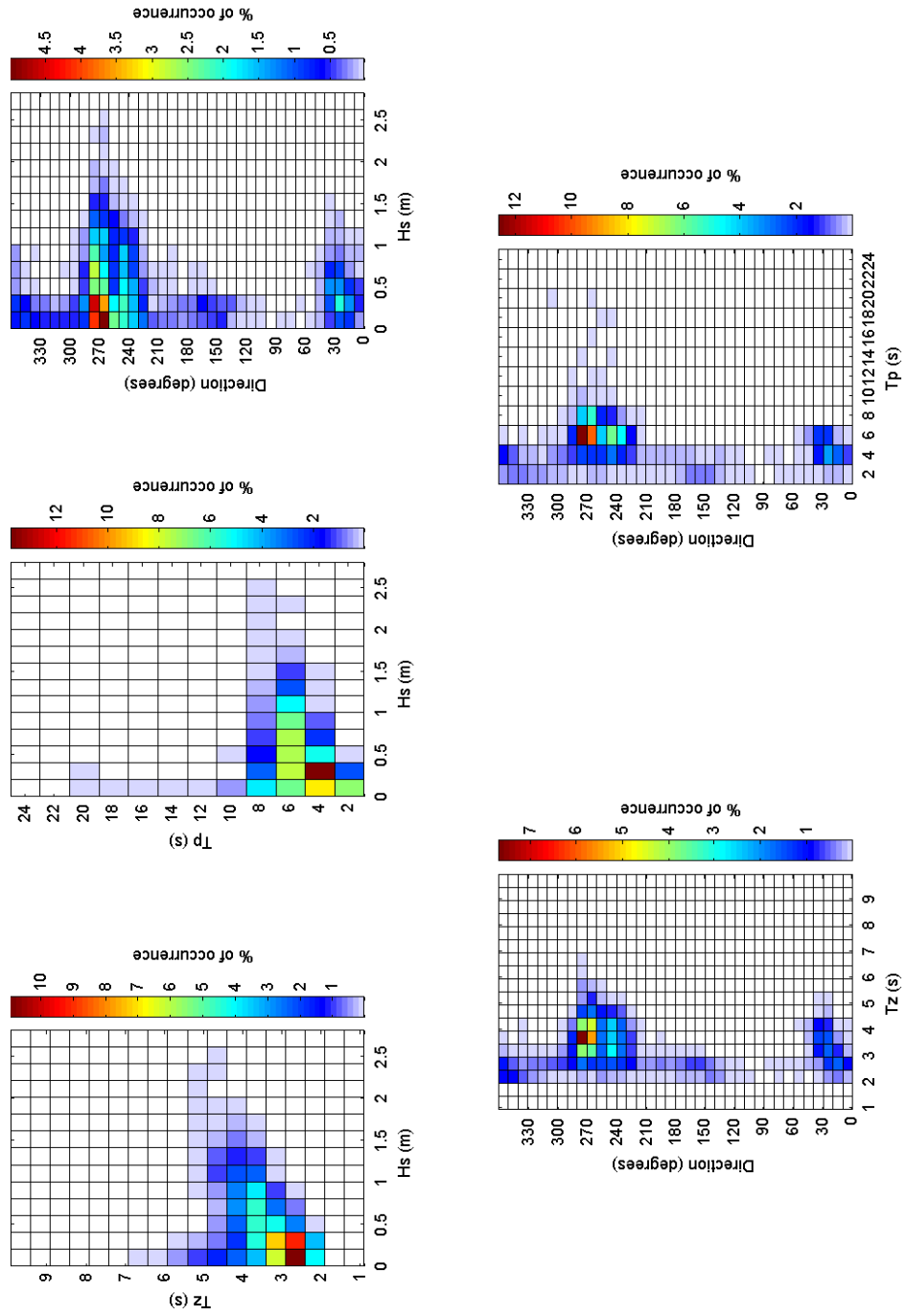
Weston Bay 2009

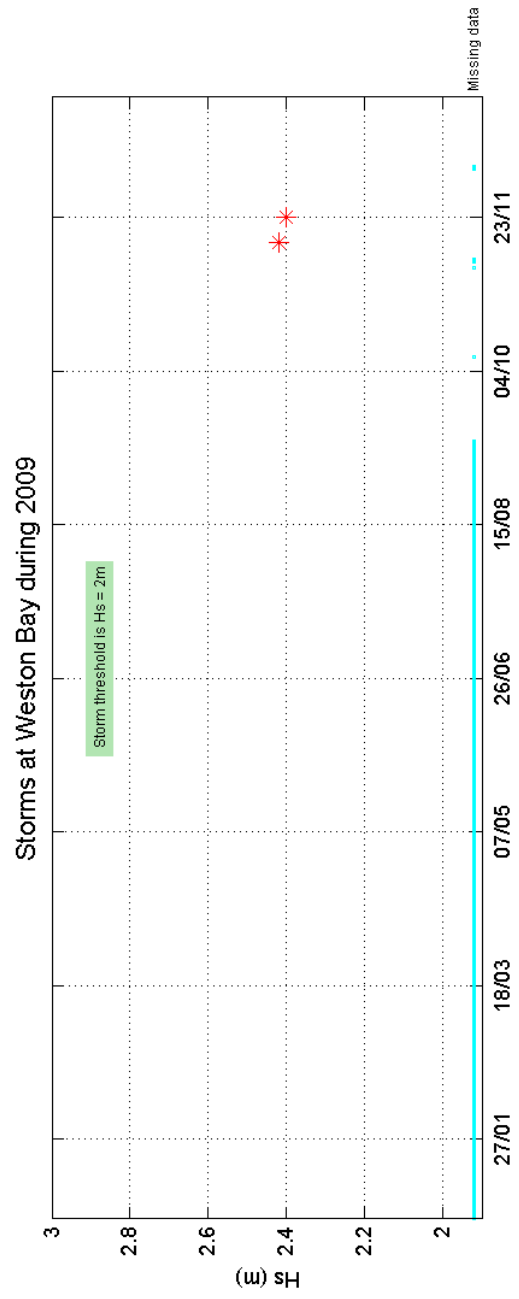


Weston Bay 2009 - Joint distribution



Weston Bay 2009 - Joint distribution (% of occurrence)





Missing data

### Significant wave height, $H_s$ , at Weston Bay during 2009

