

Hornsea Directional Waverider Buoy

Location

OS: 527071E 448459N

WGS84: Latitude: 53° 55.003' N Longitude: 00° 04.004' W

Water Depth

~12 m CD

Instrument Type

Datawell Directional Waverider Mk III

Data Quality

Recovery rate (%)	Sample interval
98	30 minutes

Statistics - 2012

All times are GMT

Month	H _s (m)	T _p (s)	T _z (s)	Dir. (°)	SST (°C)	No. of days
January	0.89	8.0	4.1	84	6.9	30
February	0.86	8.1	4.2	71	5.9	28
March	0.56	10.0	4.6	48	6.7	30
April	1.15	8.3	5.1	51	7.9	30
May	0.93	7.5	4.4	50	9.6	30
June	0.79	6.7	4.1	74	11.9	29
July	0.59	6.4	3.8	77	13.8	31
August	0.55	5.7	3.6	84	14.7	31
September	0.64	7.1	3.6	90	13.5	29
October	0.90	7.3	4.2	74	11.8	30
November	0.84	8.9	4.1	62	9.5	29
December	1.14	7.6	4.3	77	7.4	30

Storm Analysis

Date/Time	H _s (m)	T _p (s)	T _z (s)	Dir. (°)	Water level elevation* (OD)	Tidal stage (hours re. HW)	Tidal range (m)	Tidal surge* (m)	Max. surge* (m)
04-Apr-2012 04:30	4.99	10.0	7.4	55	-	HW +1	4.7	-	-
20-Dec-2012 12:00	3.42	9.1	6.2	100	1.78	HW +1	3.6	-0.31	-0.02
29-Apr-2012 09:00	3.37	8.3	6.0	53	-	HW -2	5.4	-	-
27-Oct-2012 14:00	3.33	10.0	6.3	23	1.13	HW -2	4.5	0.14	0.55

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

Annual Statistics

Year	Annual H_s exceedance* (m)						Annual Maximum H_s	
	0.05%	0.5%	1%	2%	5%	10%	Date	A_{max} (m)
2008	-	3.03	2.78	2.52	1.77	1.44	22-Nov-2008 13:30	3.78
2009	4.34	3.37	2.93	2.34	1.77	1.44	17-Dec-2009 14:30	4.87
2010	3.78	3.39	3.12	2.77	2.24	1.80	10-Jan-2010 04:00	4.08
2011	2.83	2.41	2.17	1.93	1.65	1.38	23-Jul-2011 21:00	2.99
2012	4.30	3.08	2.73	2.34	1.88	1.51	04-Apr-2012 04:30	4.99

* i.e. 5 % of the H_s values measured in 2008 exceeded 1.77 m

Distribution plots

The distribution of wave parameters are shown in the accompanying graphs of:

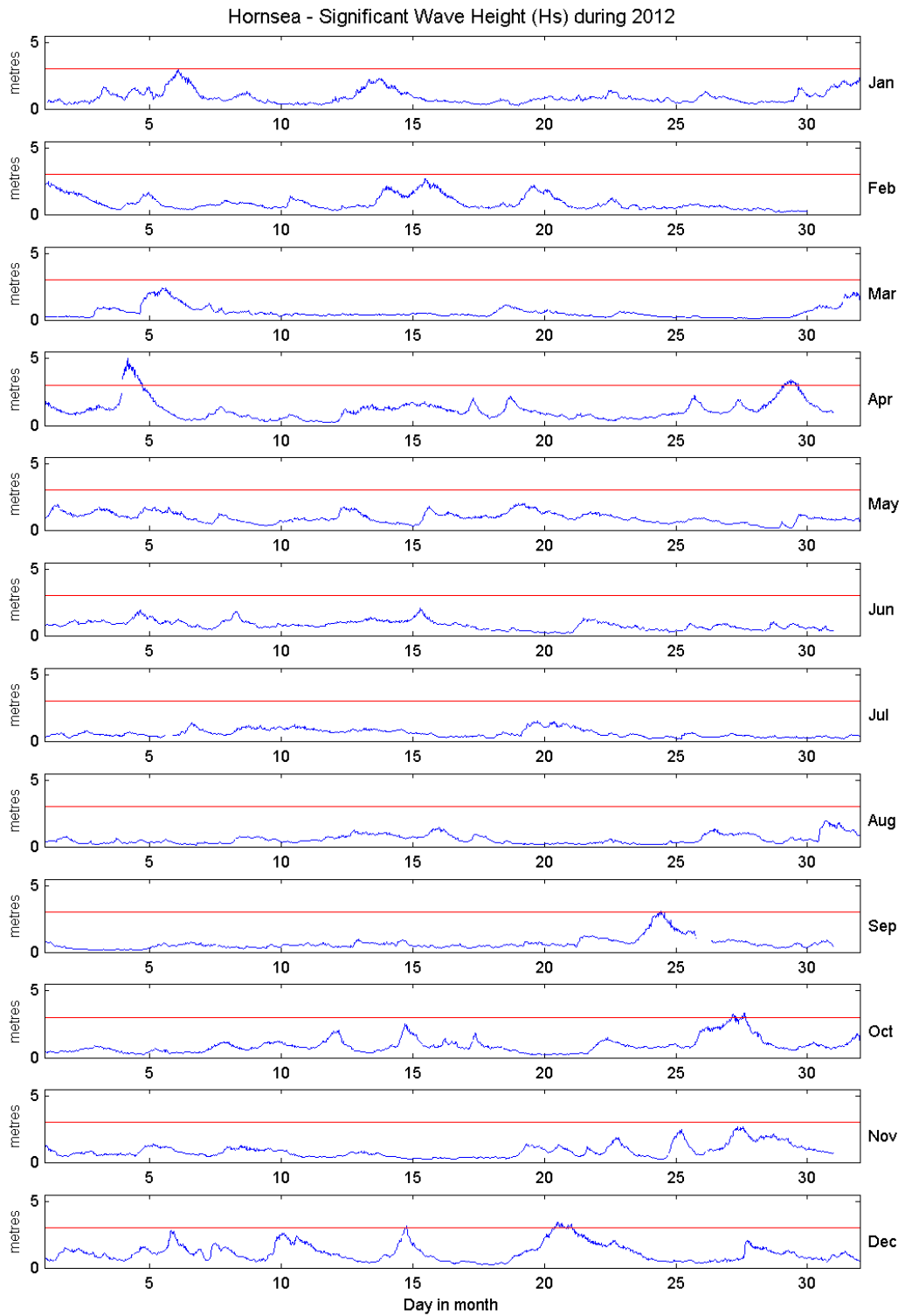
- Annual time series of H_s (red line is 3.0 m storm threshold)
- Wave roses (Direction vs. H_s and vs. T_p) for all measured data
- Percentage of occurrence of H_s , T_p , T_z and Direction for 2012
- Incidence of storm waves for 2012. Storm events are defined using the Peaks-over-Threshold method. The highest H_s of each storm event is shown
- Joint distribution of all parameters for all measured data, given as percentage of occurrence

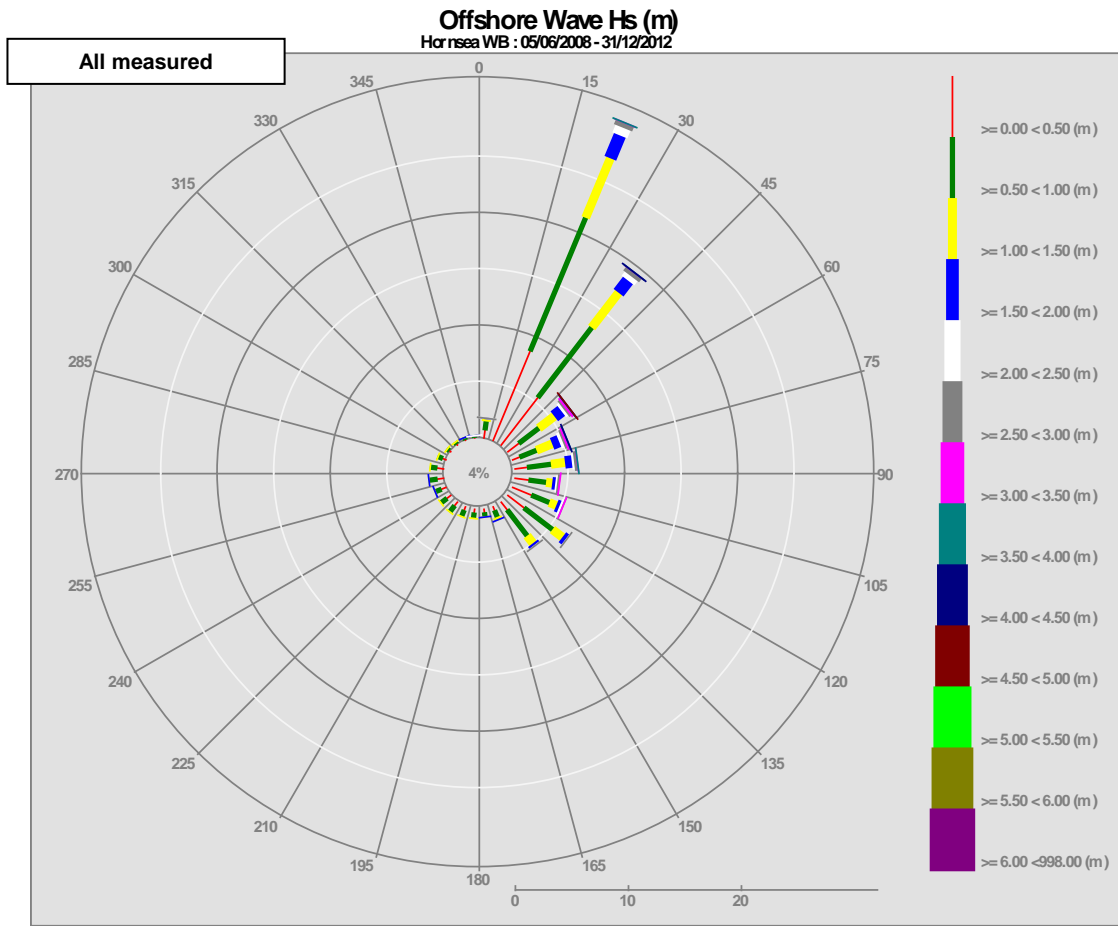
General

The buoy, owned by East Riding of Yorkshire Council, was deployed on 5 June 2008 at which time the magnetic declination at the site was 2.2° west, changing by 0.15° east per year.

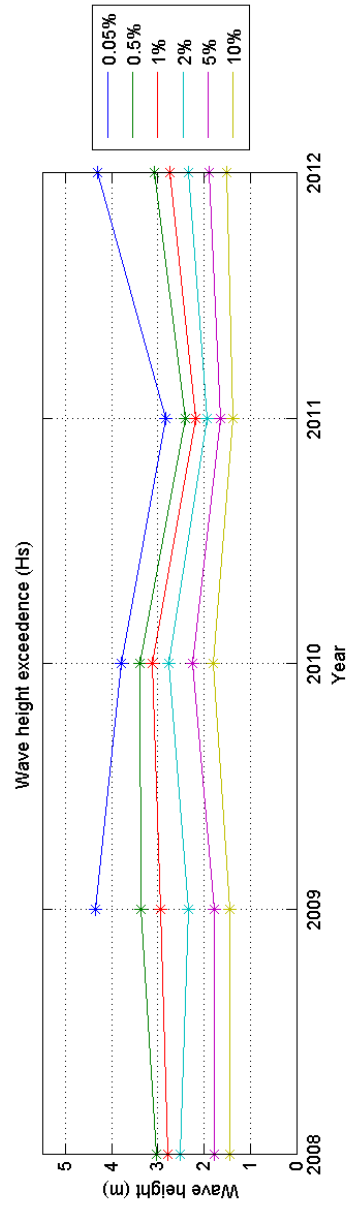
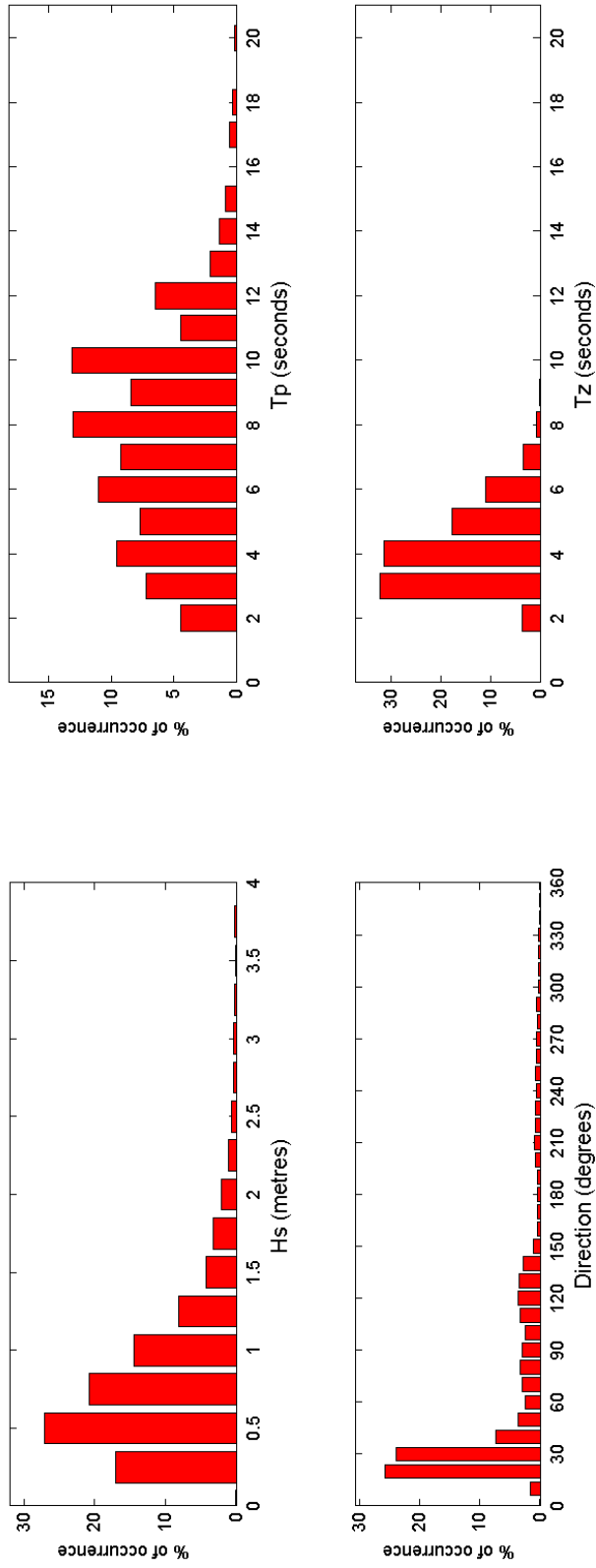
Acknowledgements

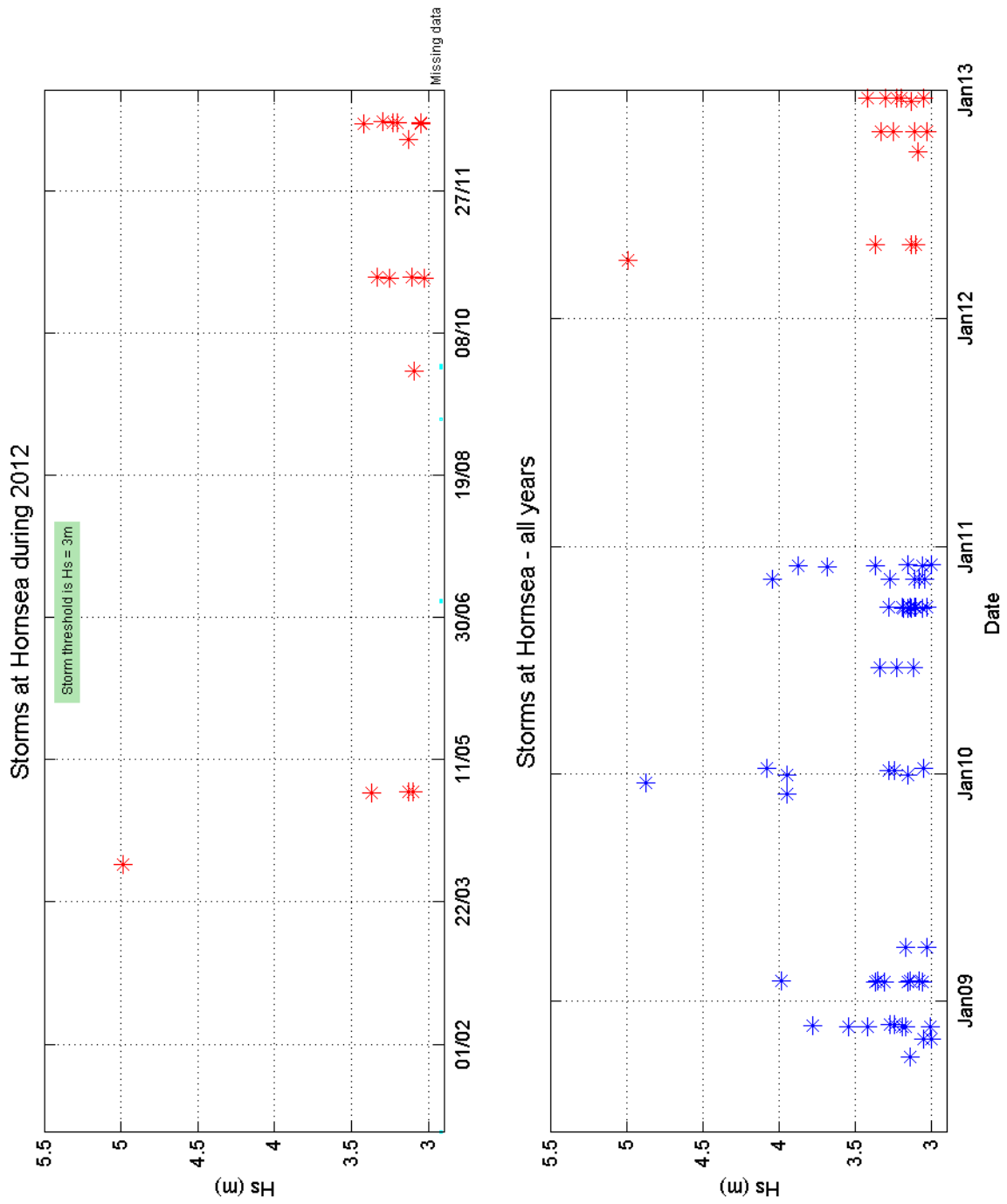
Tidal data were supplied by the British Oceanographic Data Centre as part of the function of the National Tidal and Sea Level Facility, hosted by the Proudman Oceanographic Laboratory and funded by DEFRA and the Natural Environment Research Council.





Hornsea 2012





Hornsea 2008 to 2012 - Joint distribution (% of occurrence)

