

Folkestone Directional Waverider Buoy

Location

OS: 619265E 133907N

WGS84: Latitude: 51° 03.756' N Longitude: 01° 07.671' E

Water Depth

~13 m CD

Instrument Type

Datawell Directional Waverider Mk III

Data Quality

Recovery rate (%)	Sample interval
99	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	0.62	5.5	3.6	160	8.3	30
February	0.50	5.4	3.6	143	5.6	29
March	0.33	6.0	3.3	138	7.5	31
April	0.64	5.2	3.6	151	9.2	30
May	0.40	4.7	3.4	136	11.6	31
June	0.63	4.5	3.3	159	14.3	30
July	0.49	4.5	3.3	163	16.1	31
August	0.49	4.3	3.2	164	17.8	31
September	0.52	4.5	3.3	165	17.0	29
October	0.68	5.3	3.6	149	14.4	31
November	0.75	5.6	3.7	160	11.3	30
December	0.82	6.3	3.9	164	8.9	31

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)
14-Dec-2012 13:00	2.87	6.7	5.3	169	-	HW +2	6.1	-	-
25-Nov-2012 04:30	2.81	7.7	5.2	181	-	HW -4	4.3	-	-
03-Jan-2012 13:30	2.77	9.1	5.0	173	-1.55	HW -5	3.0	-0.22	-0.29

* Tidal information is obtained from the nearest recording tide gauge (the National Network gauge at Dover). The surge shown is the residual at the time of the highest H_s. The maximum tidal surge is the largest 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)
2003	-	2.23	2.03	1.75	1.37	1.16	29-Nov-2003 13:30	3.07
2004	2.91	2.30	1.97	1.75	1.44	1.18	08-Jan-2004 12:00	3.25
2005	2.90	2.15	1.81	1.54	1.25	0.97	30-Dec-2005 14:00	3.15
2006	2.55	2.08	1.84	1.68	1.42	1.17	03-Dec-2006 09:00	3.13
2007	2.56	2.06	1.83	1.59	1.34	1.11	08-Dec-2007 17:00	2.86
2008	2.98	2.40	2.10	1.85	1.44	1.16	10-Mar-2008 10:30	3.58
2009	2.65	2.14	1.88	1.68	1.39	1.12	22-Jan-2009 08:30	2.98
2010	2.66	1.95	1.69	1.42	1.15	0.94	08-Nov-2010 12:00	2.92
2011	2.91	1.99	1.73	1.52	1.31	1.09	13-Dec-2011 01:30	3.11
2012	2.69	2.12	1.94	1.71	1.38	1.1	14-Dec-2012 13:00	2.87

* i.e. 5 % of the H_s values measured in 2003 exceeded 1.37 m

Distribution plots

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

- Annual time series of H_s (red line is 2.7 m storm threshold)
- Wave roses (Direction vs. H_s and vs. T_p) for all measured data from 01 April 2004
- 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

Significant wave height return periods

Return periods for significant wave height can be calculated since the buoy has been deployed for more than 5 years. The return periods are based on 3-hourly records and are calculated for periods up to 10 times the record length, using a Weibull distribution.

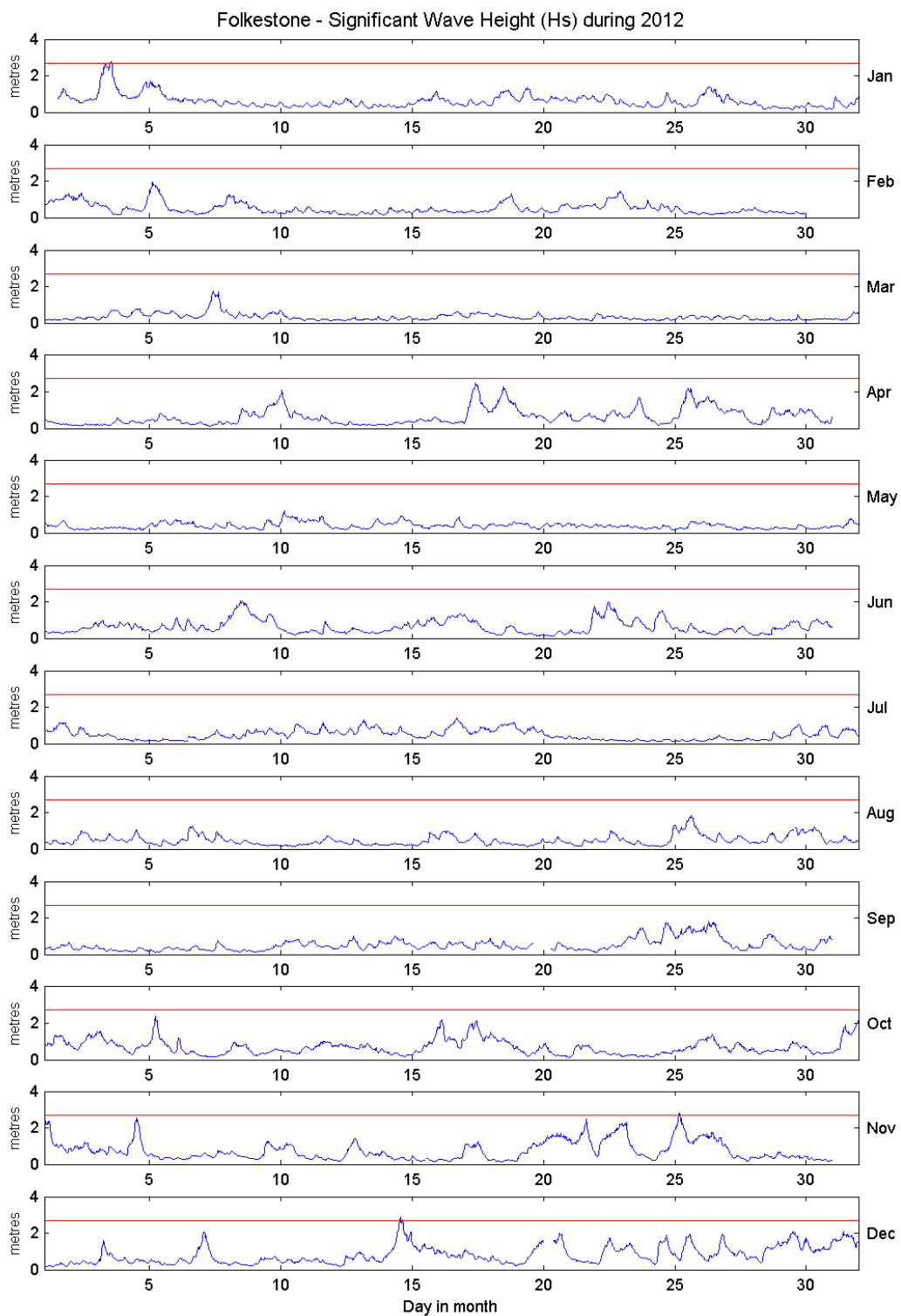
Return period (years)	Significant wave height (m)	Comments
1	3.0	No depth-limitation
2	3.2	
5	3.4	
10	3.5	
20	3.6	
50	3.8	

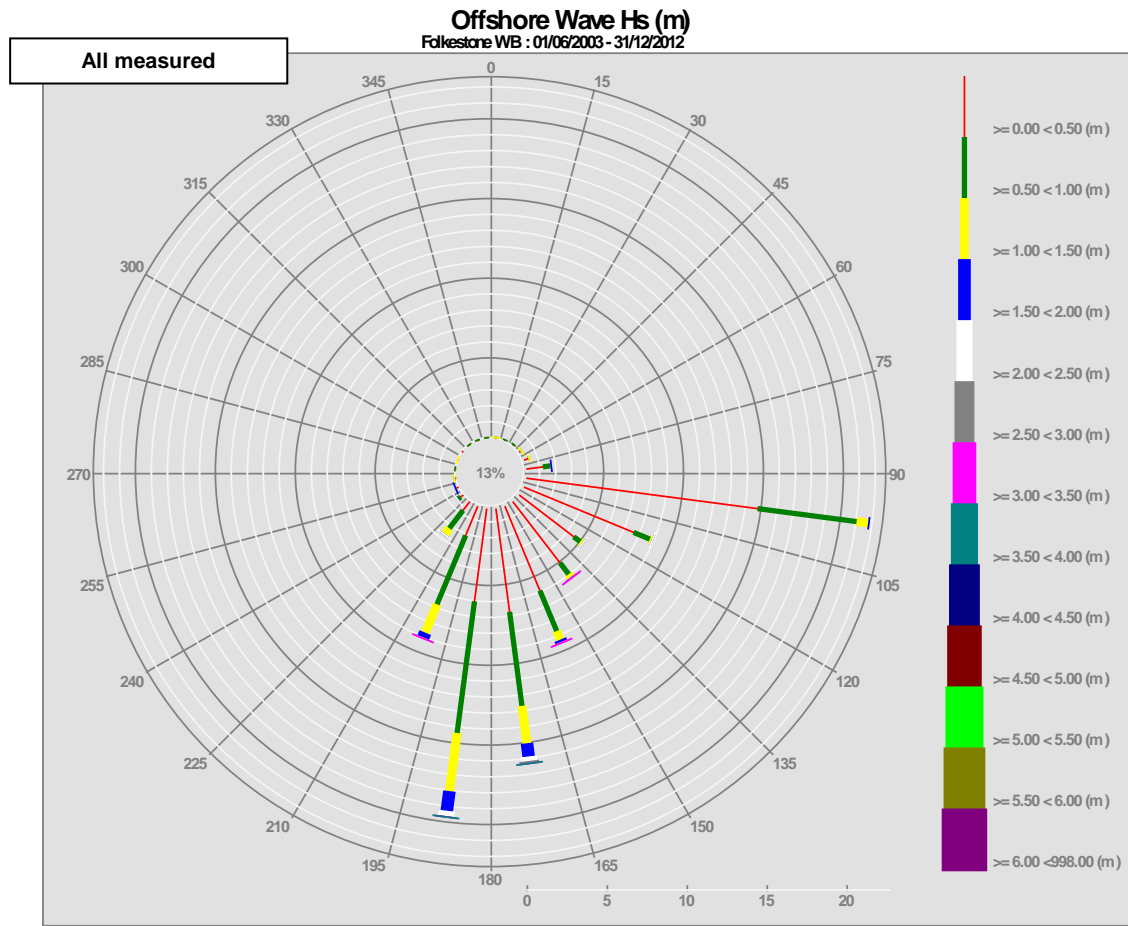
General

The buoy was first deployed on 1 June 2003, at which time the magnetic declination at the site was 2.1° west, changing by 0.14° east per year.

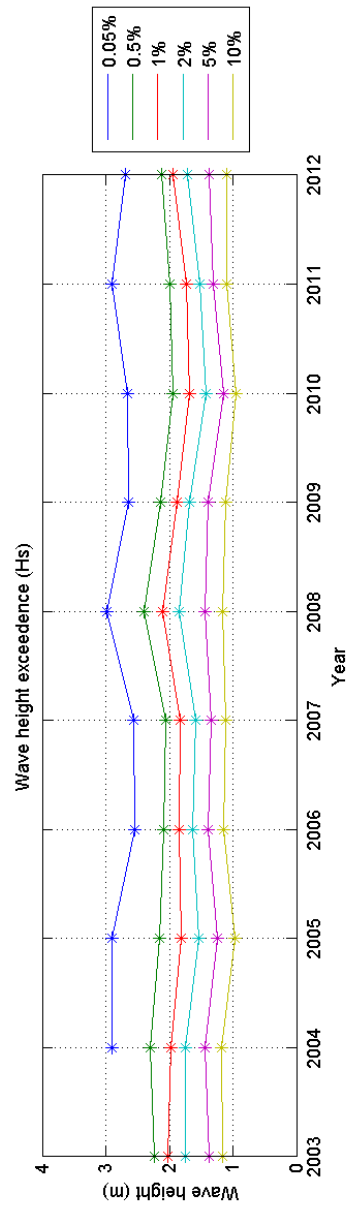
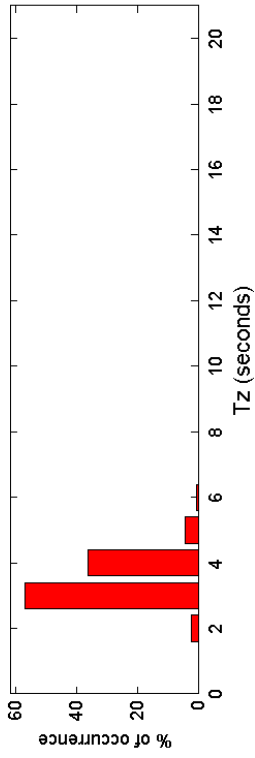
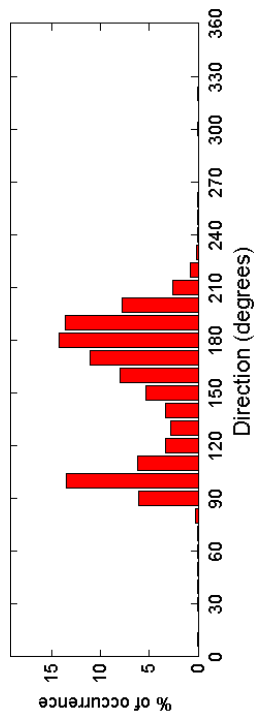
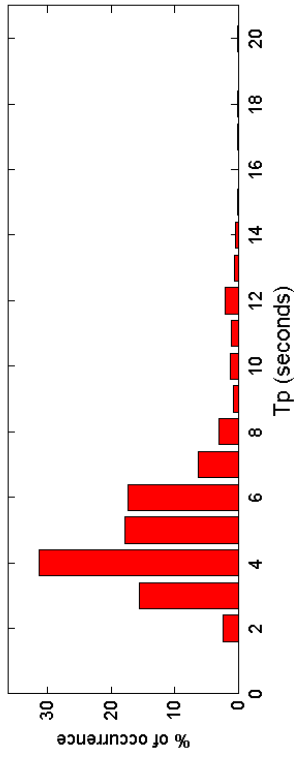
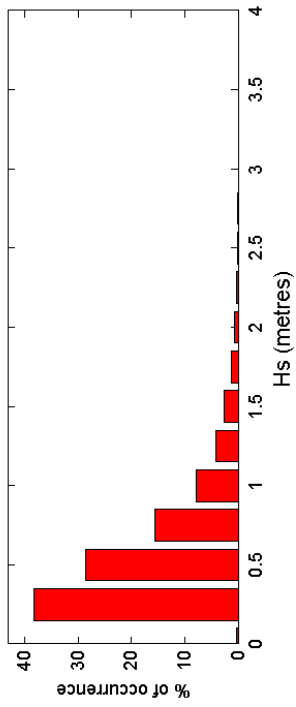
Acknowledgements

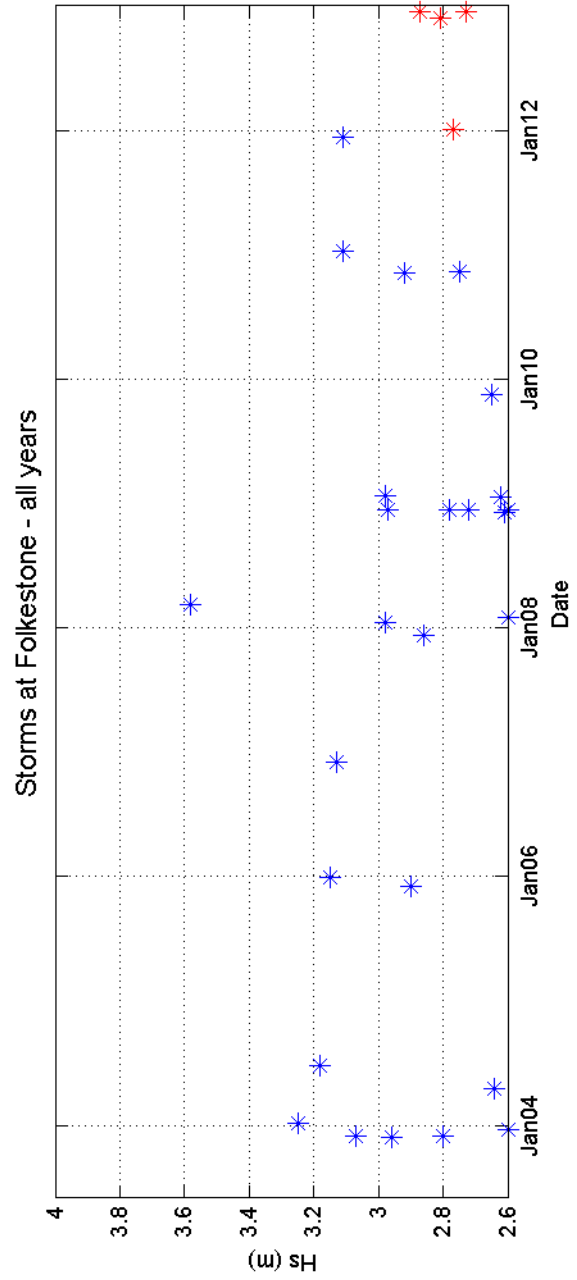
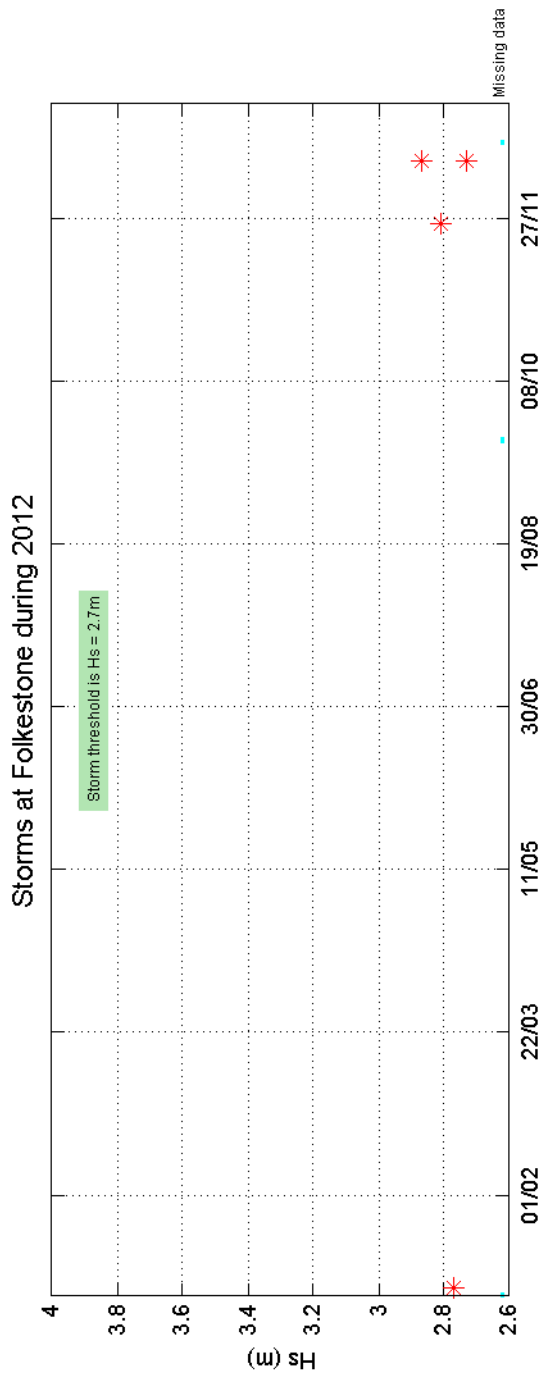
Tidal data were supplied by the British Oceanographic Data Centre as part of the function of the National Tidal and Sea Level Facility, hosted by the Proudman Oceanographic Laboratory and funded by DEFRA and the Natural Environment Research Council.





Folkestone 2012





Folkestone 2003 to 2012 - Joint distribution (% of occurrence)

