

Pevensy Bay Directional Waverider Buoy

Location

OS: 570429E 100915N

WGS84: Latitude: 50° 46.966' N Longitude: 00° 24.975' E

Water Depth

~10 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	0.92	5.9	4.0	192	8.4	31
February	0.63	5.9	3.6	175	6.5	25
March	0.46	6.5	3.4	177	8.1	31
April	0.83	5.5	3.7	177	9.6	30
May	0.50	4.6	3.3	160	11.9	30
June	0.81	5.4	3.6	185	15.0	30
July	0.63	5.2	3.5	199	16.6	31
August	0.61	5.4	3.4	194	18.3	31
September	0.66	4.8	3.5	195	17.1	29
October	0.93	5.7	3.8	176	14.4	30
November	0.97	6.0	3.9	192	11.8	30
December	1.12	6.9	4.2	202	8.9	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)
03-Jan-2012 13:00	3.51	10.0	6.0	214	-0.84	HW -6	2.3	0.31	0.44

* Tidal information is obtained from the nearest recording tide gauge (the National Network gauge at Newhaven). 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)
2003	-	2.66	2.41	2.08	1.61	1.34	02-Nov-2003 11:30	4.18
2004	3.65	2.72	2.51	2.24	1.86	1.53	31-Oct-2004 17:00	3.92
2005	3.44	2.83	2.37	2.09	1.71	1.31	03-Dec-2005 00:00	3.55
2006	3.59	2.89	2.64	2.33	1.91	1.59	03-Dec-2006 09:30	4.10
2007	3.85	2.84	2.58	2.26	1.89	1.54	18-Jan-2007 12:00	4.23
2008	3.79	3.04	2.73	2.44	2.03	1.65	13-Dec-2008 12:00	3.97
2009	3.43	2.88	2.66	2.38	1.92	1.56	14-Nov-2009 17:30	3.61
2010	3.62	2.64	2.24	1.91	1.52	1.22	08-Nov-2010 12:00	4.13
2011	3.85	2.57	2.29	2.02	1.69	1.43	13-Dec-2011 01:30	4.42
2012	3.33	2.75	2.49	2.19	1.82	1.48	03-Jan-2012 13:00	3.51

* i.e. 5 % of the H_s values measured in 2003 exceeded 1.61 m

Distribution plots

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

- Annual time series of H_s (red line is 3.5 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.

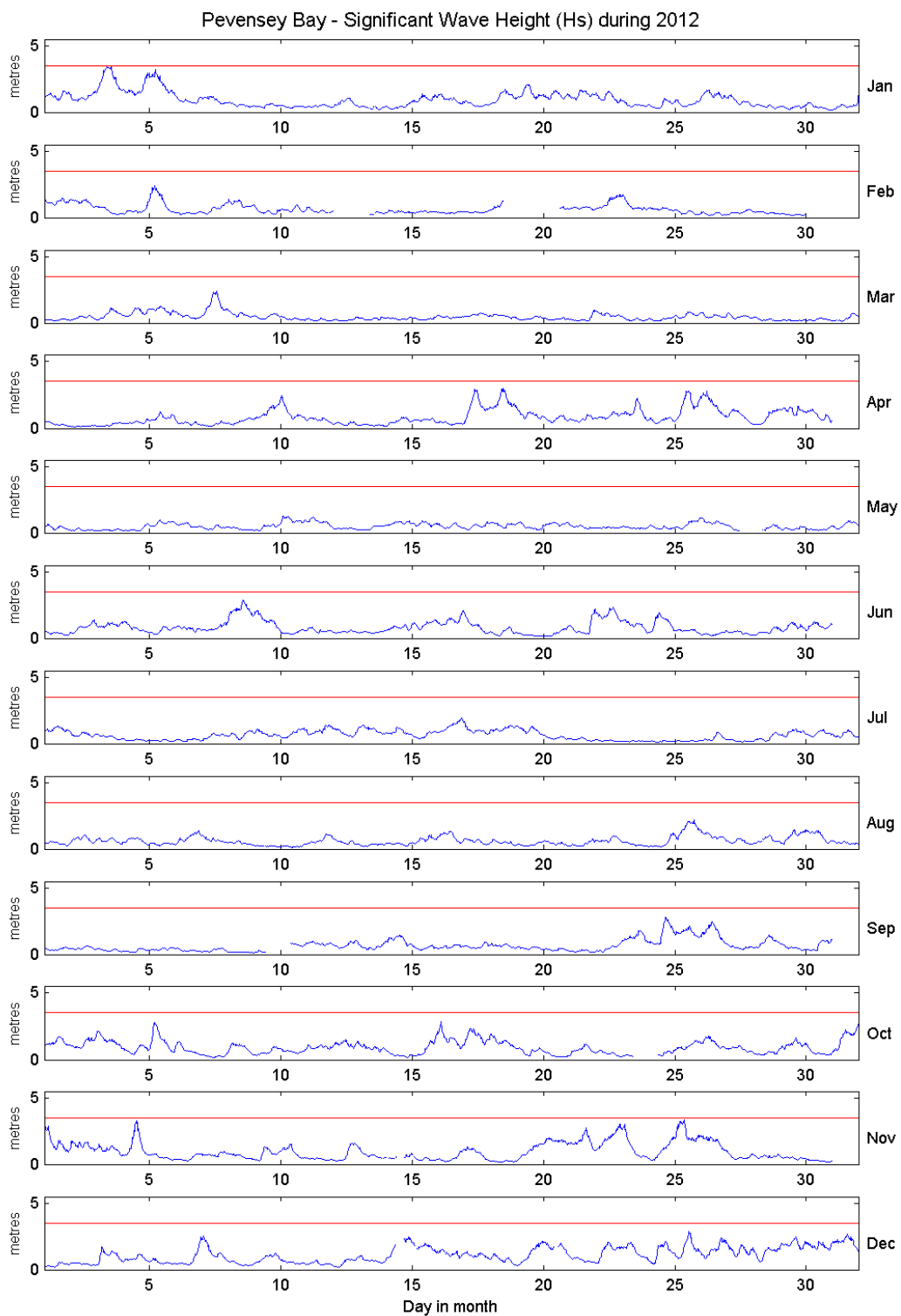
Return period (years)	Significant wave height (m)	Comments
1	3.9	No depth limitation
2	4.0	
5	4.2	
10	4.4	Depth-limited at MLWS
20	4.5	
50	4.6	

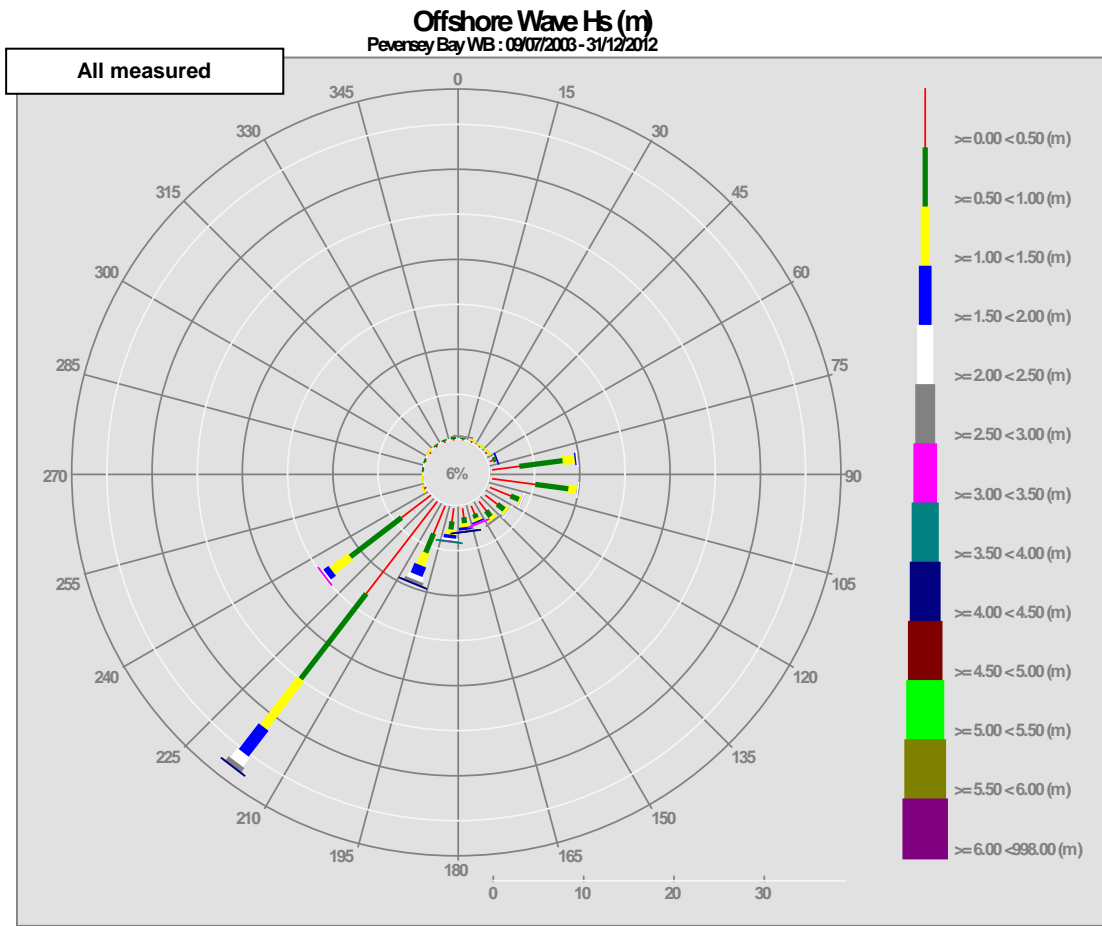
General

The buoy was first deployed on 9 July 2003, at which time the magnetic declination at the site was 2.3° west, changing by 0.14° east per year.

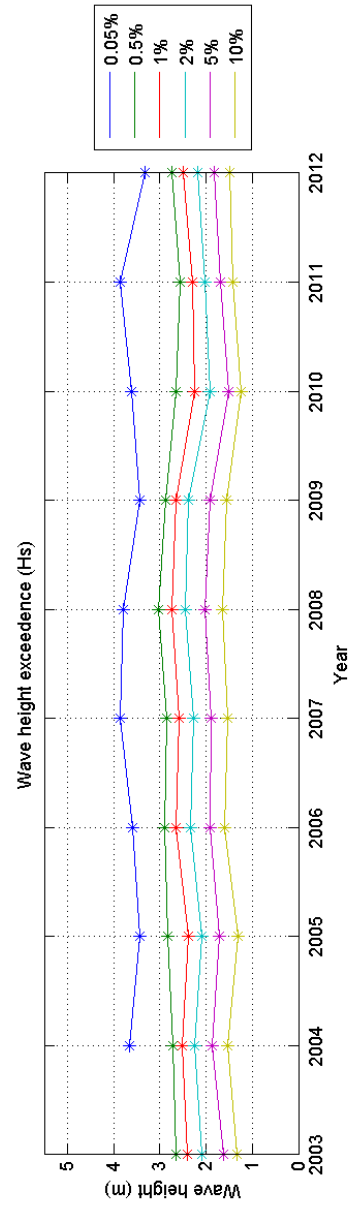
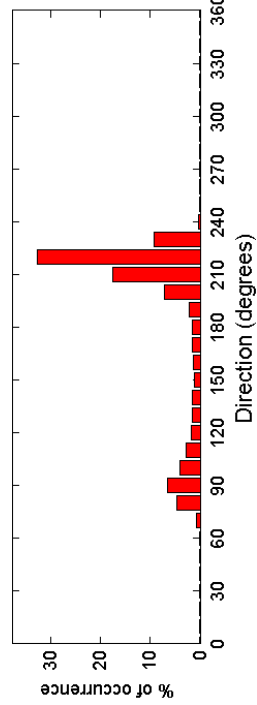
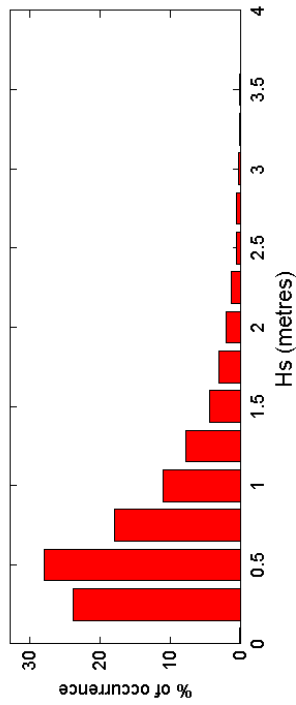
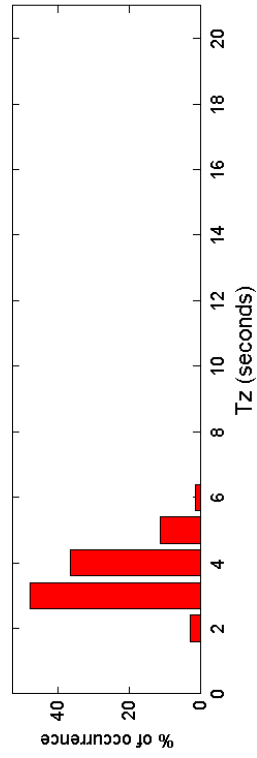
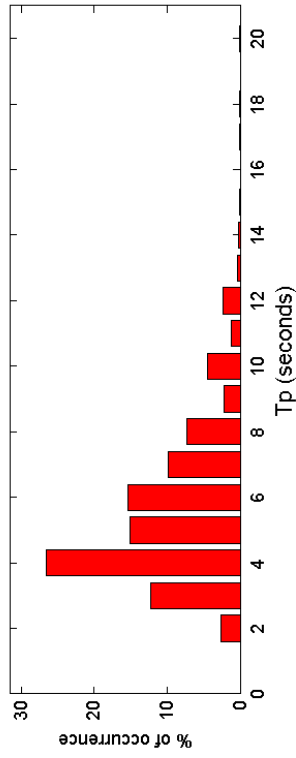
Acknowledgements

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Pevensey Bay 2012



Pevensey Bay 2003 to 2012 - Joint distribution (% of occurrence)

