

Dawlish Directional Waverider Buoy

Location

OS: 299739E 76510N

WGS84: Latitude: 50° 34.781' N Longitude: 03° 25.046' W

Water Depth

~11 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	0.57	7.6	3.7	170	10.2	31
February	0.46	7.3	3.9	168	8.0	29
March	0.36	8.1	3.7	156	9.6	29
April	0.64	6.7	3.8	156	10.2	30
May	0.42	5.2	3.3	160	12.4	31
June	0.58	5.3	3.4	160	13.9	30
July	0.37	4.9	3.3	173	15.5	31
August	0.55	5.5	3.4	168	17.0	31
September	0.36	5.7	3.4	172	16.3	30
October	0.68	6.0	3.8	153	14.5	31
November	0.63	6.9	3.9	158	12.3	30
December	0.71	8.4	4.1	170	10.3	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)
30-Apr-2012 07:00	4.63	10.0	7.4	169	0.10	HW -5	1.5	0.4	0.4
25-Apr-2012 06:00	3.00	7.7	5.7	159	1.06	HW -2	3.2	0.4	0.6
19-Dec-2012 10:00	2.94	7.1	5.5	166	1.87	HW	3.1	0.2	0.3
22-Nov-2012 17:30	2.84	7.1	5.3	173	-0.05	HW +5	2.1	0.4	0.4

* Tidal information is obtained from the nearest recording tide gauge (the WaveRadar REX on Teignmouth Pier). 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)
2011	2.78	2.21	1.95	1.63	1.31	1.04	24-Oct-2011 16:30	3.24
2012	3.74	2.33	2.08	1.78	1.35	1.07	30-Apr-2012 07:00	4.63 ⁺

* i.e. 5 % of the H_s values measured in 2011 exceeded 1.31 m

⁺ Note that waves were breaking at the buoy for several hours during this storm; where breaking waves were clearly present in the measured time series, the parameters have been omitted. Accordingly, there may have been short periods where measured significant wave heights exceeded this value.

Distribution plots

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

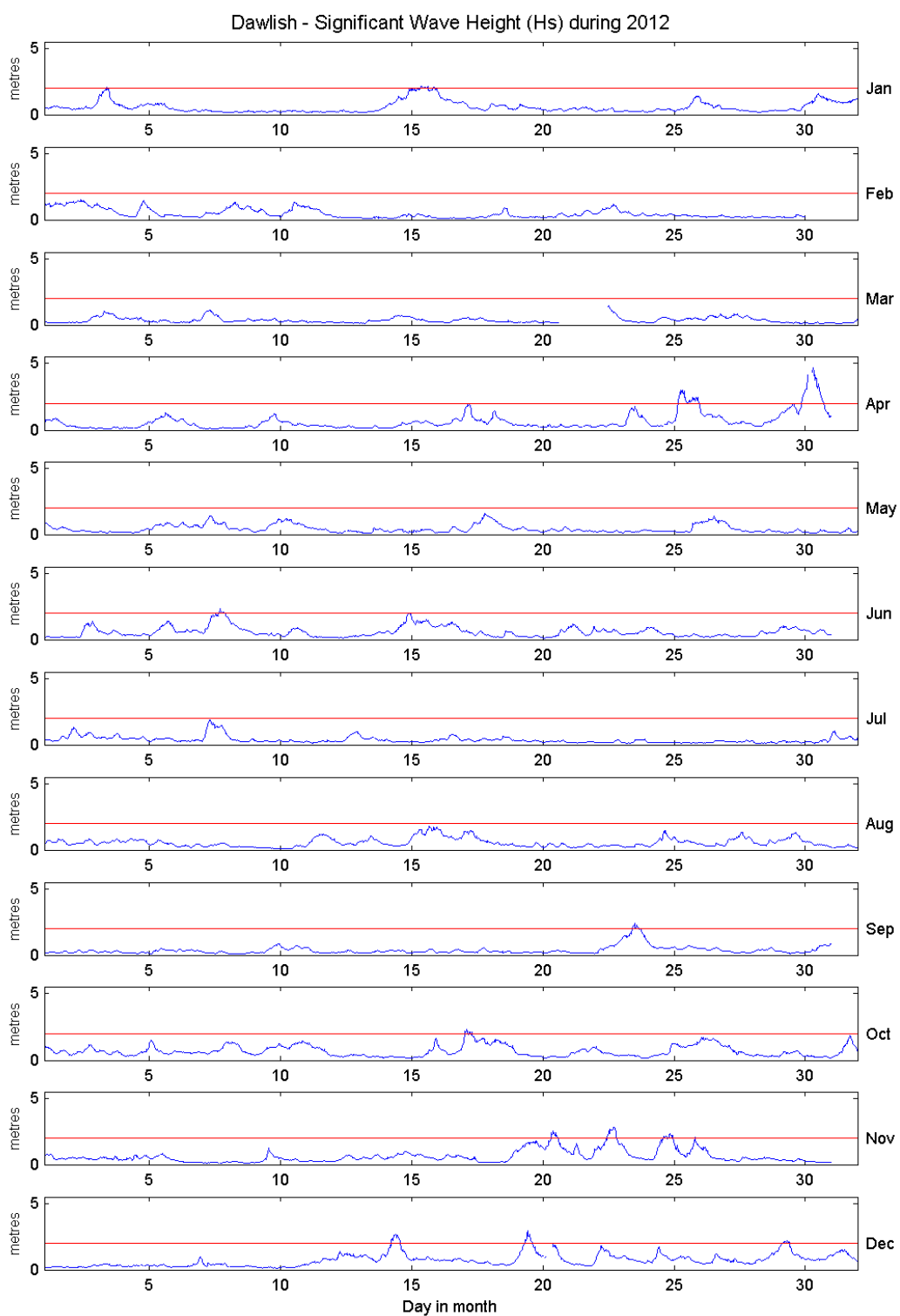
- Annual time series of H_s (red line is 2.0 m storm threshold)
- Wave roses (Direction vs. H_s and vs. T_p) for all measured data
- Percentage of occurrence of H_s , T_p , T_z and Direction for 2012
- Incidence of storm waves for 2012. Storm events are defined using the Peaks-over-Threshold method. The highest H_s of each storm event is shown
- Joint distribution of all parameters for all measured data, given as percentage of occurrence

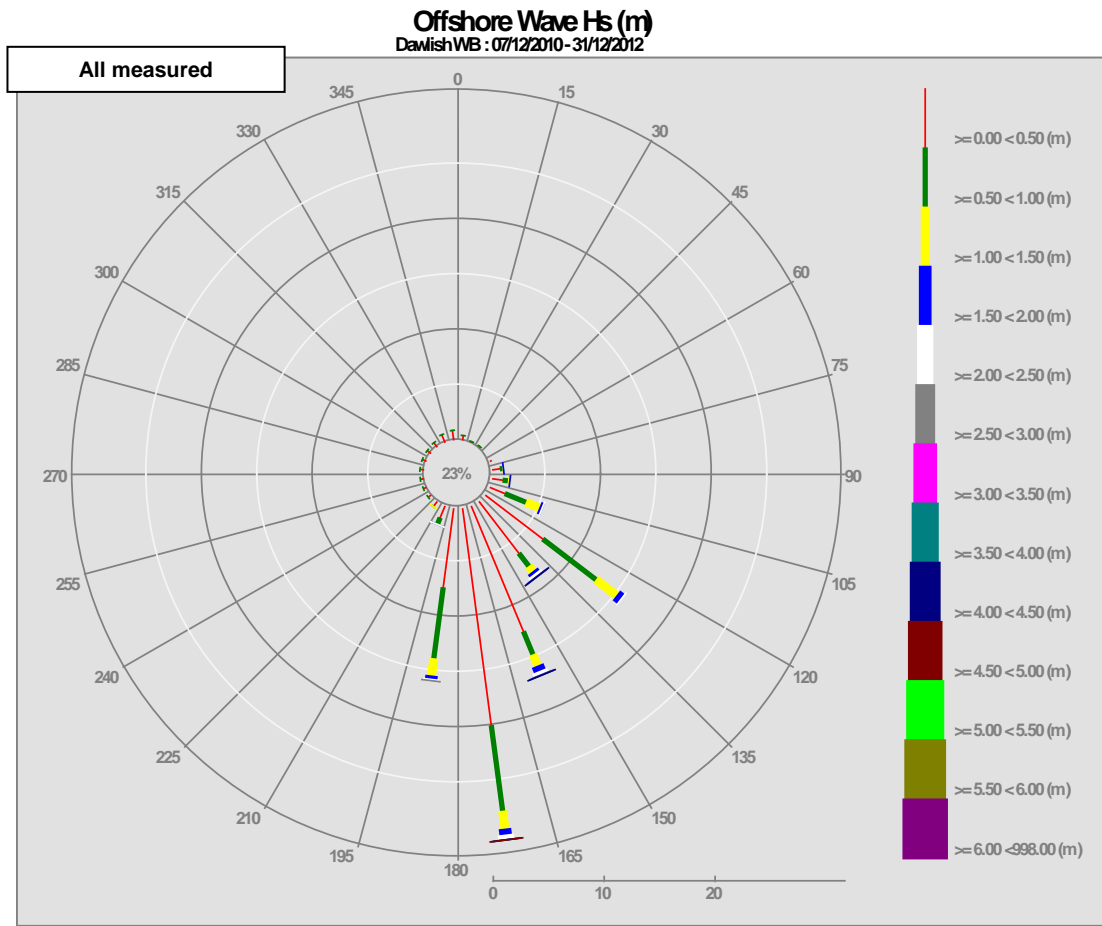
General

The wave buoy at Dawlish was deployed on 07 December 2010, at which time the magnetic declination at the site was 2.7° west, changing by 0.15° east per year.

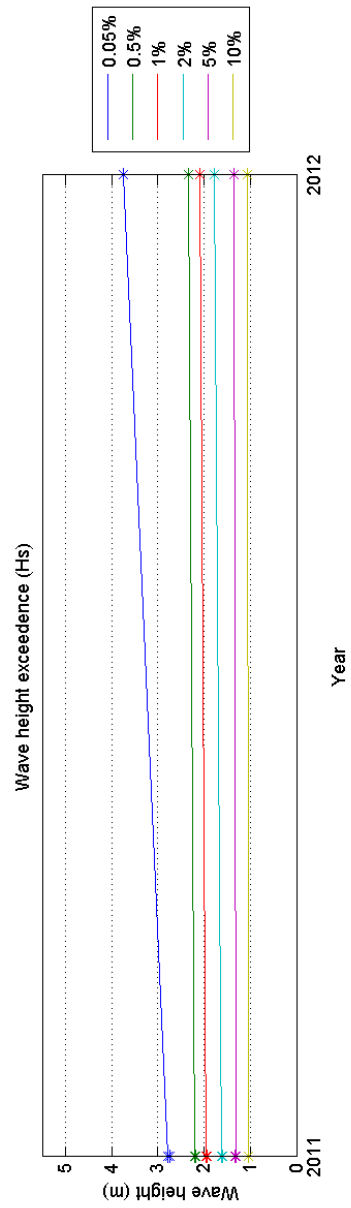
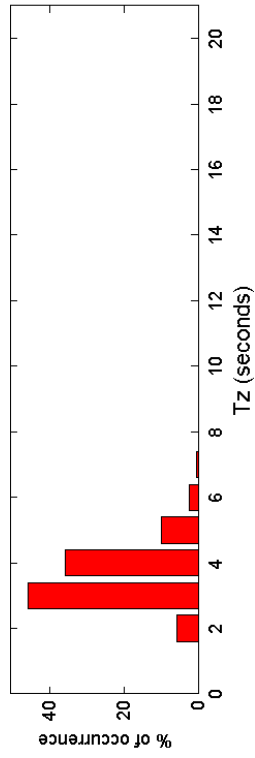
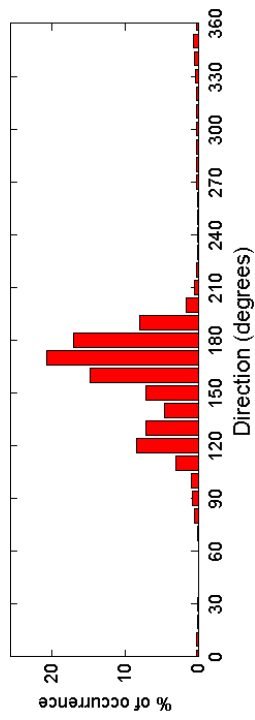
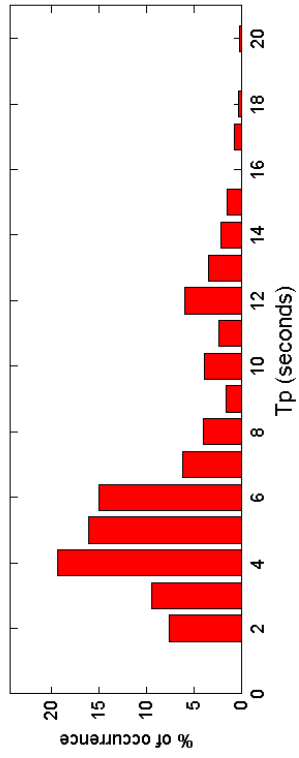
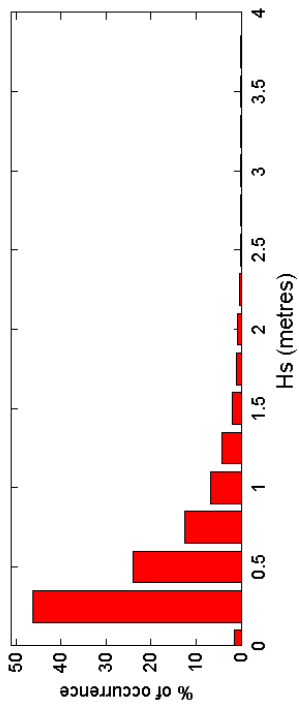
Acknowledgements

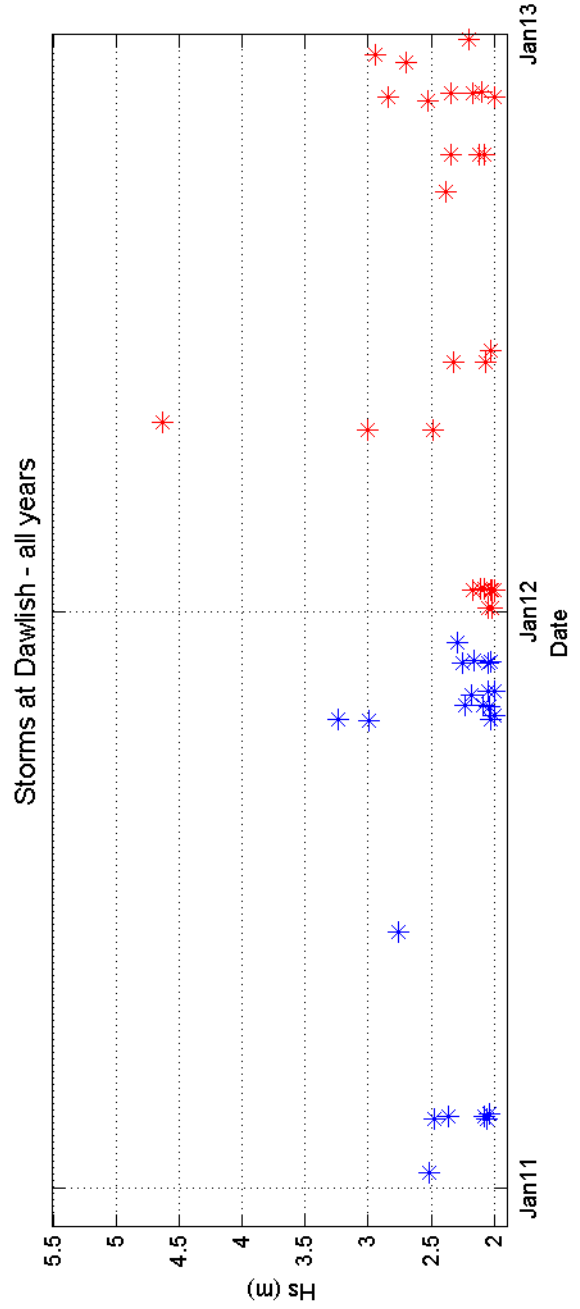
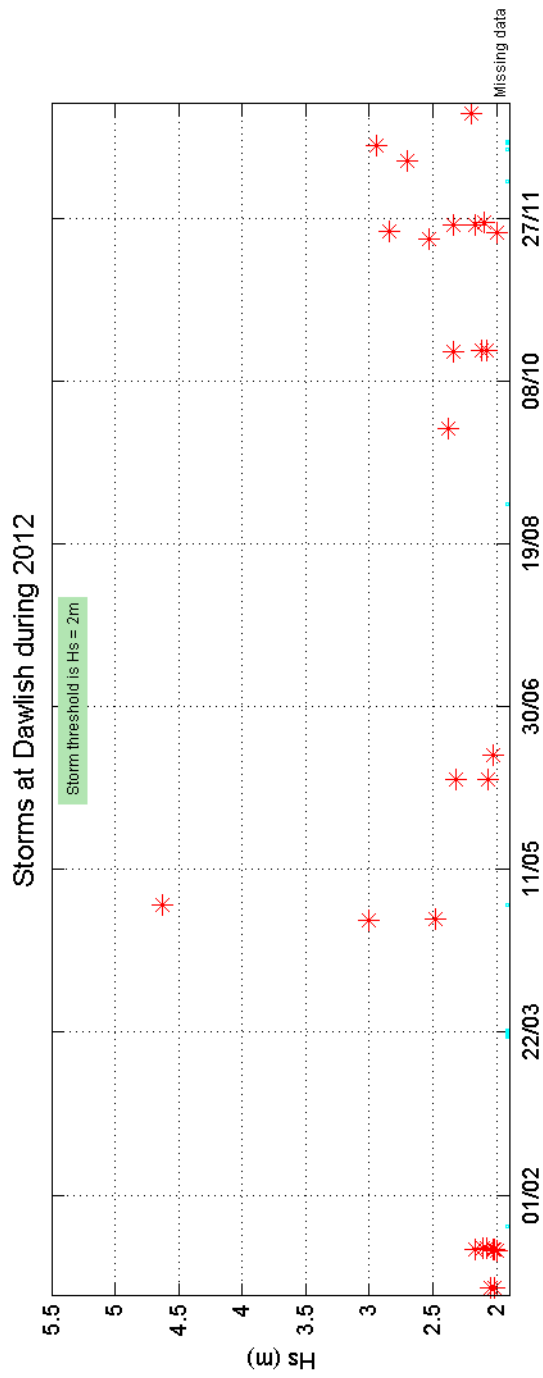
TASK2000 tidal prediction software was kindly provided by the Permanent Service for Mean Sea Level, Proudman Oceanographic Laboratory.





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Dawlish 2010 to 2012 - Joint distribution (% of occurrence)

