



## Dawlish Directional Waverider Buoy

<b>Location</b>			
OS	299740 E 76510 N		
WGS84	Latitude: 50° 34.781' N Longitude: 03° 25.046' W		
<b>Instrument type</b>			
Datawell Directional Waverider Mk III			
<b>Water depth</b>	~11 m CD	Buoy in situ off Dawlish beach. Photo courtesy of Fugro EMU Limited	Location of buoy (Google mapping)

### Data Quality

Recovery rate (%)	Sample interval
99	30 minutes

### Monthly Averages - 2014

*All times are GMT*

Month	H <sub>s</sub> (m)	T <sub>p</sub> (s)	T <sub>z</sub> (s)	Dir. (°)	SST (°C)	No. of days
January	0.87	8.9	4.2	168	9.9	31
February	1.13	9.9	4.3	172	9.1	28
March	0.56	7.6	3.8	162	9.5	31
April	0.49	7.7	3.8	159	11.0	30
May	0.39	5.5	3.3	162	12.9	29
June	0.35	5.0	3.2	150	16.0	30
July	0.28	4.9	3.2	176	17.7	31
August	0.40	5.1	3.3	180	17.4	30
September	0.43	5.8	3.4	139	17.6	30
October	0.64	6.3	3.6	166	15.9	31
November	0.93	7.2	4.2	153	13.3	30
December	0.48	7.7	3.8	171	11.0	31

## Storm Analysis

Date/Time	H <sub>s</sub> (m)	T <sub>p</sub> (s)	T <sub>z</sub> (s)	Dir. (°)	Water level elevation* (OD)	Tidal stage (hours re. HW)	Tidal range (m)	Tidal surge* (m)	Max. surge* (m)
05-Feb-2014 01:30	5.62	10.0	7.7	160	-	-	-	-	1.33
13-Nov-2014 12:30	4.16	7.7	6.3	163	-	-	-	-	0.94
14-Feb-2014 22:30	4.14	13.3	6.8	177	-	-	-	-	1.60
06-Oct-2014 08:30	3.46	8.3	6.3	165	-	-	-	-	0.88
03-Feb-2014 20:30	3.18	7.1	5.8	151	-	-	-	-	0.68

## Annual Statistics

Year	Annual H <sub>s</sub> exceedance* (m)						Annual Maximum H <sub>s</sub>	
	0.05%	0.5%	1%	2%	5%	10%	Date	A <sub>max</sub> (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 <sup>+</sup>
2013	2.97	2.37	2.10	1.85	1.51	1.20	18-Dec-2013 22:00	3.44
2014	3.96	2.93	2.50	2.07	1.50	1.16	05-Feb-2014 01:30	5.62 <sup>+</sup>

\* i.e. 5 % of the H<sub>s</sub> values measured in 2011 exceeded 1.31 m

<sup>+</sup> 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<sub>s</sub> (red line is 2.5 m storm threshold)
- Wave rose (percentage of occurrence of direction vs. H<sub>s</sub>) for all measured data
- Percentage of occurrence of H<sub>s</sub>, T<sub>p</sub>, T<sub>z</sub> and Direction for 2014
- Incidence of storm waves for 2014. Storm events are defined using the Peaks-over-Threshold method. The highest H<sub>s</sub> of each storm event is shown
- Joint distribution of all parameters for all measured data, given as percentage of occurrence

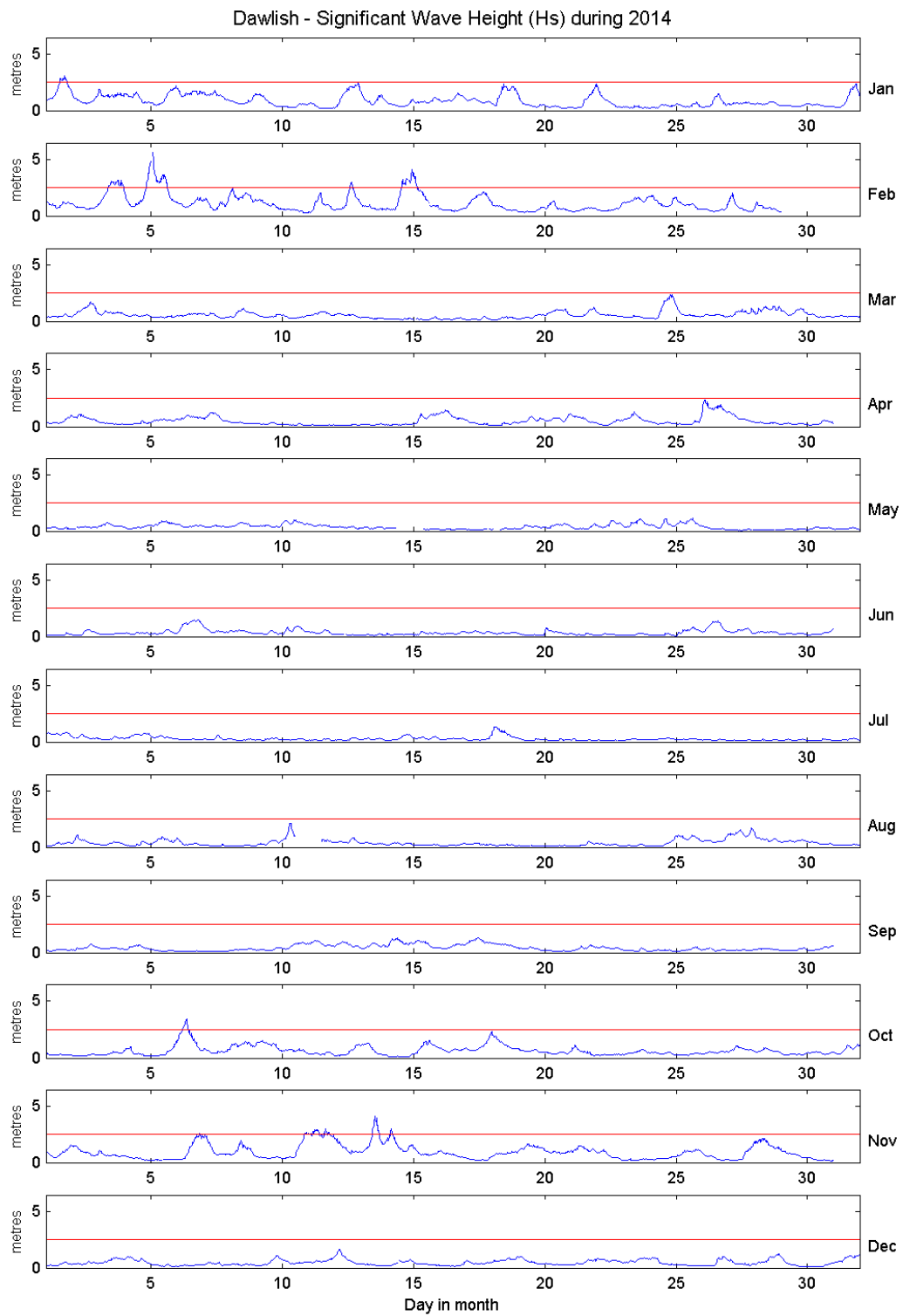
\* Tidal information used to be obtained from the WaveRadar REX on Teignmouth Pier but this was put out of action on 03 Feb 2014 by damage to the pier. Accordingly, the maximum tidal surge during the storm event is that measured at the next closest tide gauge (the step gauge at West Bay Harbour).

## **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.

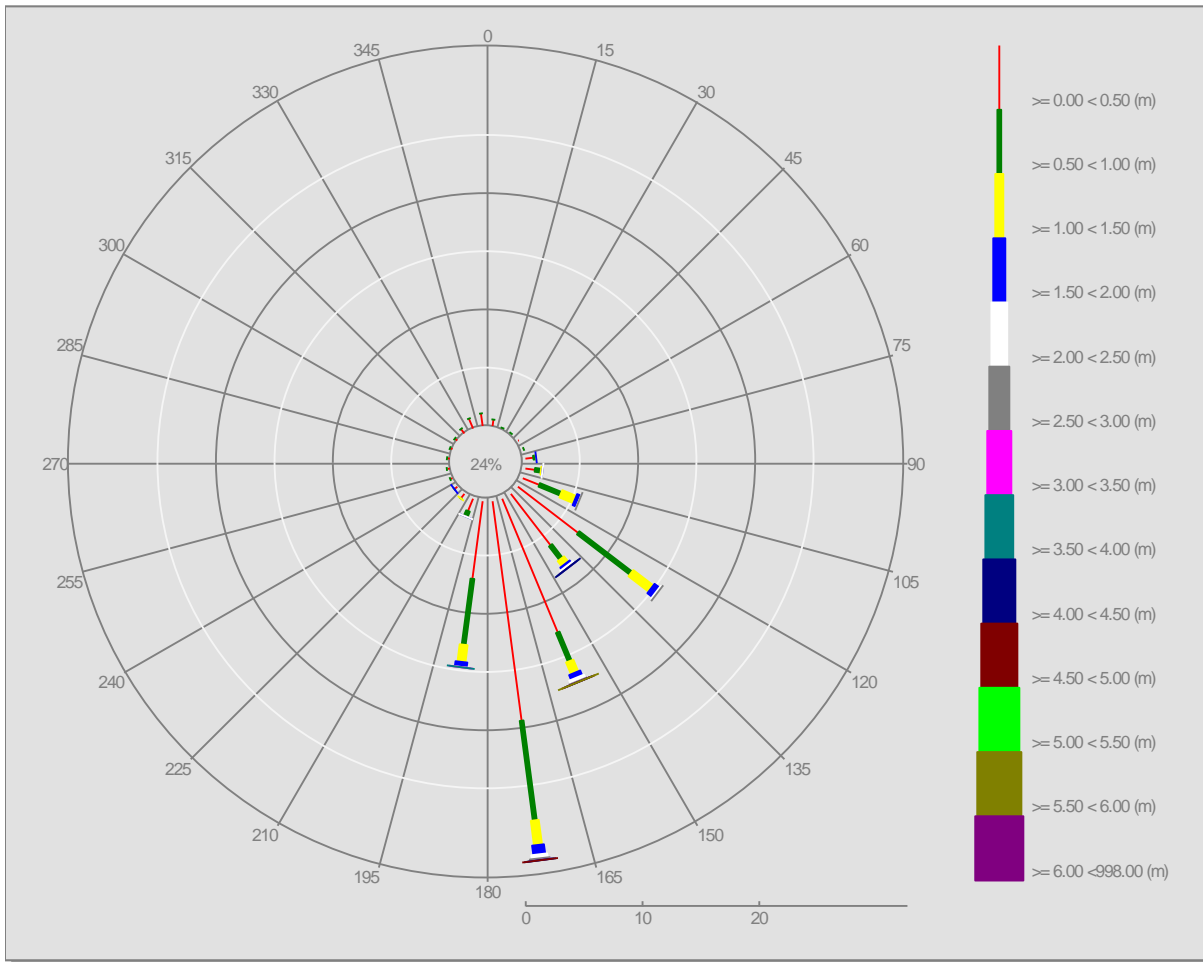
## **Acknowledgements**

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

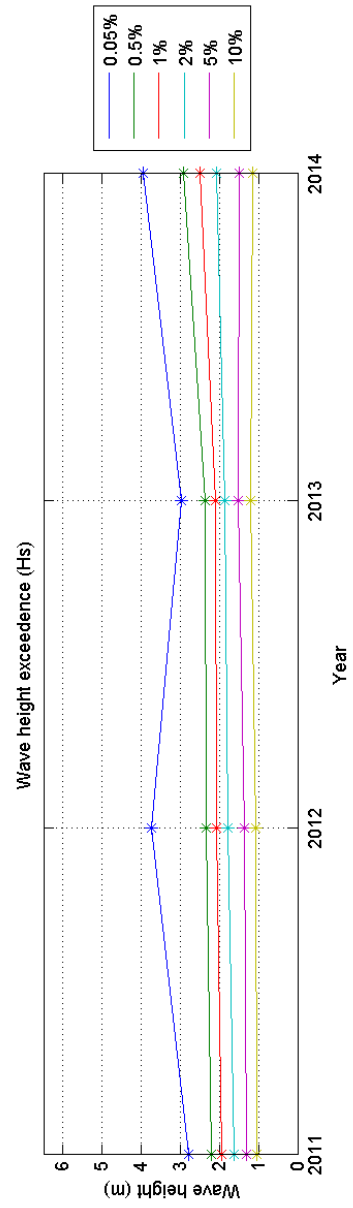
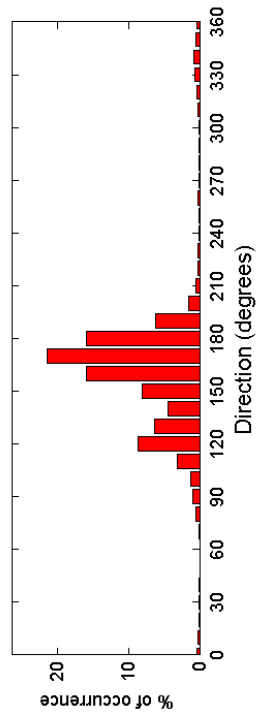
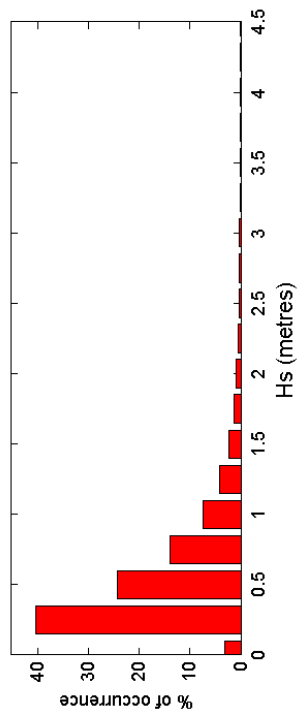
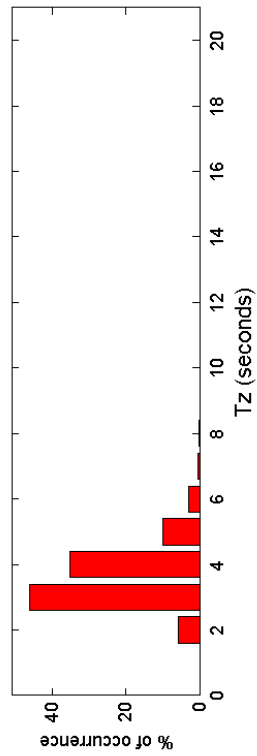
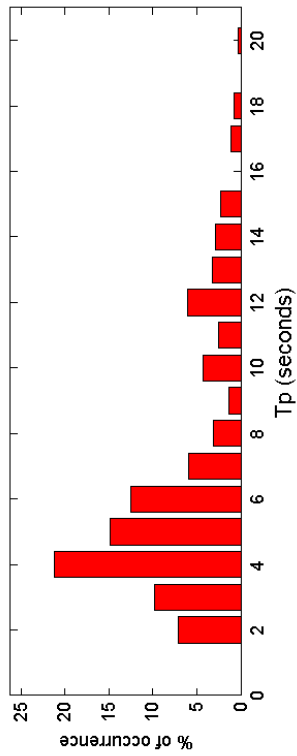


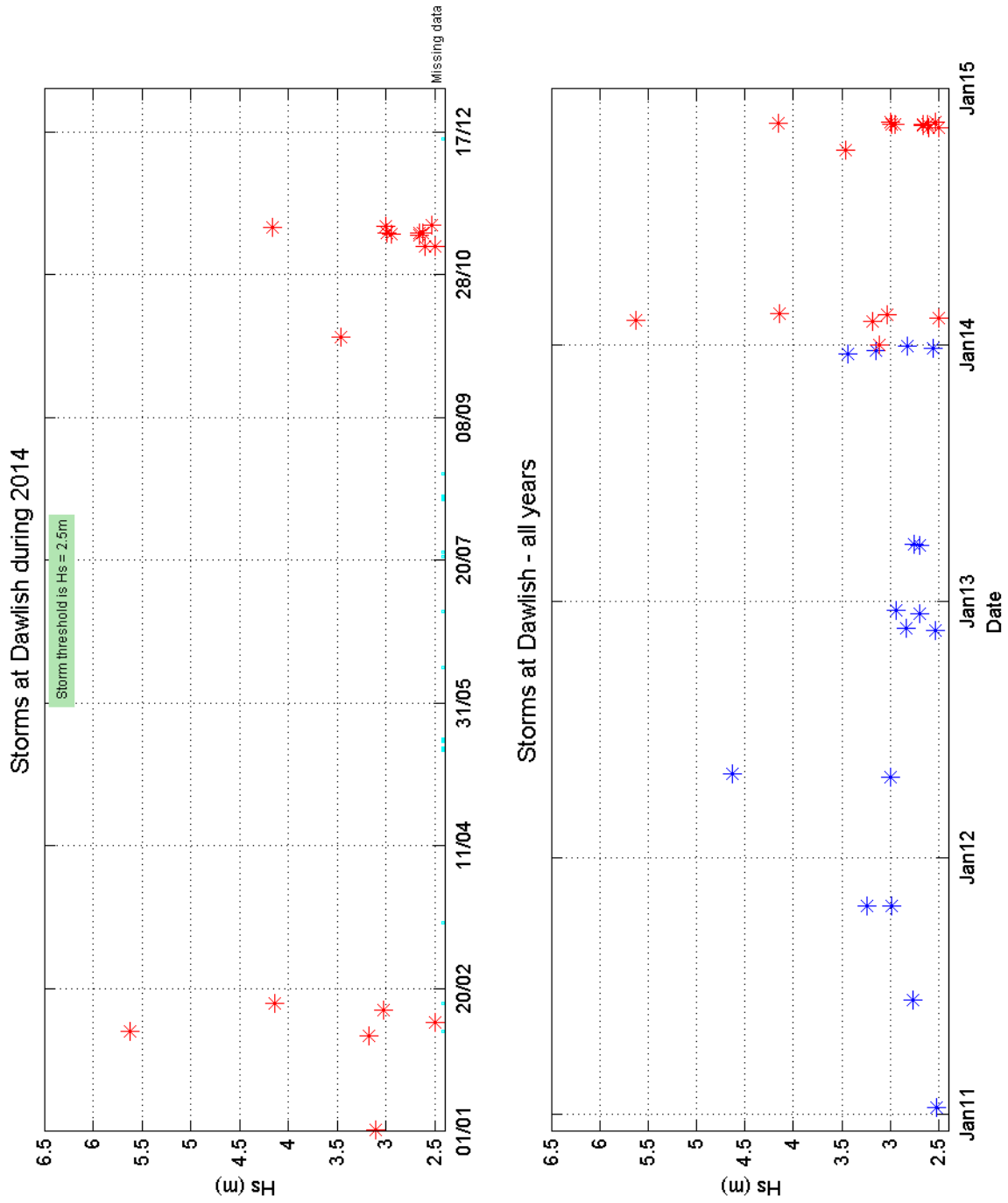
### Offshore Wave Hs (m)

Dawlish WB : 07/12/2010 - 31/12/2014



Dawlish 2014





Dawlish 2010 to 2014 - Joint distribution (% of occurrence)

