



Port Isaac Step Gauge

Location			
OS	199489 E 80998 N		
WGS84	Latitude: 50° 35.651' N Longitude: 04° 50.065' W		
Instrument type			
Etrometa Step Gauge			
Water depth	N/A	Step gauge in situ in Port Isaac Harbour. Photo courtesy of Fugro EMU Limited	Location of step gauge (Google mapping)

Data Quality

Recovery rate (%)	Sample interval
98	30 minutes

Monthly Averages - 2014

All times are GMT

Month	H _s (m)	T _p (s)	T _z (s)	Dir. (°)	SST (°C)	No. of days
January	0.86	10.2	5.7	-	-	30
February	0.97	9.8	5.9	-	-	27
March	0.58	9.9	5.1	-	-	30
April	0.37	9.7	4.9	-	-	30
May	0.37	8.0	4.6	-	-	31
June	0.21	6.5	4.1	-	-	30
July	0.21	6.6	4.0	-	-	30
August	0.29	6.5	4.3	-	-	31
September	0.25	7.8	4.2	-	-	30
October	0.50	9.4	5.1	-	-	31
November	0.58	9.1	5.0	-	-	28
December	0.65	8.2	4.9	-	-	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)
03-Jan-2014 19:30	2.65	-	7.6	-	4.01	HW	7.6	0.07	-
08-Feb-2014 20:30	2.65	-	9.7	-	-	-	-	-	-
01-Feb-2014 18:30	2.63	-	8.7	-	-	HW	~8.0	-	-
12-Feb-2014 18:00	2.54	-	7.0	-	-	HW +2	~4.9	-	-

Annual Statistics

Year	Annual H _s exceedance* (m)						Annual Maximum H _s	
	0.05%	0.5%	1%	2%	5%	10%	Date	A _{max} (m)
2010	-	-	3.37	2.93	1.97	1.52	11-Nov-2010 22:40	5.09
2011	3.23	2.39	1.91	1.54	1.30	1.17	15-Jan-2011 19:20	3.60
2012	1.99	1.62	1.48	1.32	1.00	0.77	29-Apr-2012 10:00	2.44
2013	2.27	1.86	1.67	1.48	1.15	0.91	29-Jan-2013 15:00	2.61
2014	2.49	1.92	1.70	1.51	1.18	0.95	03-Jan-2014 19:30	2.65

* i.e. 5 % of the H_s values measured in 2010 exceeded 1.96 m

Distribution plots

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

- Annual time series of H_s (red line is 2.5 m storm threshold)
- Percentage of occurrence of H_s, T_p and T_z for 2014
- Incidence of storm waves for 2014. 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

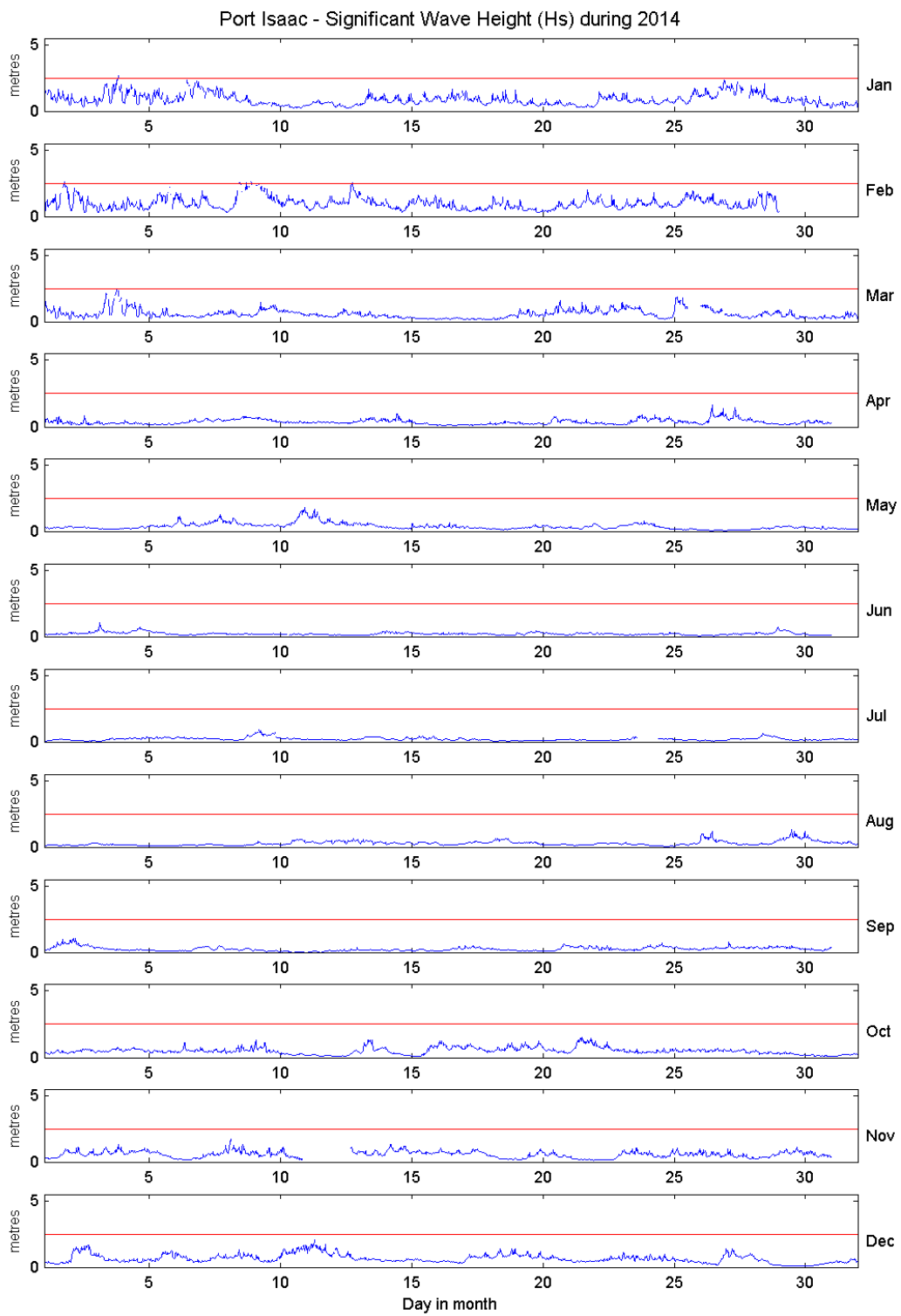
General

The Step Gauge was installed on 15 July 2010. The instrument is deployed primarily as a tide gauge, but measures waves also. Some reflection can occur from the breakwater on which the instrument is mounted.

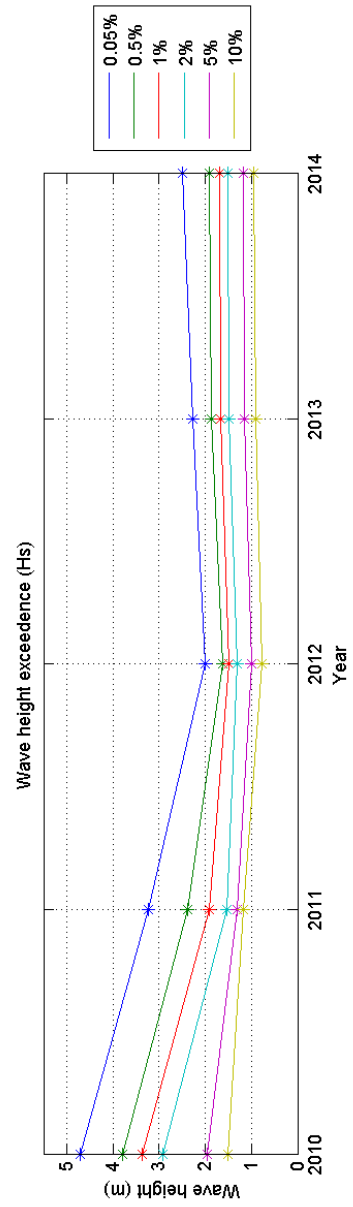
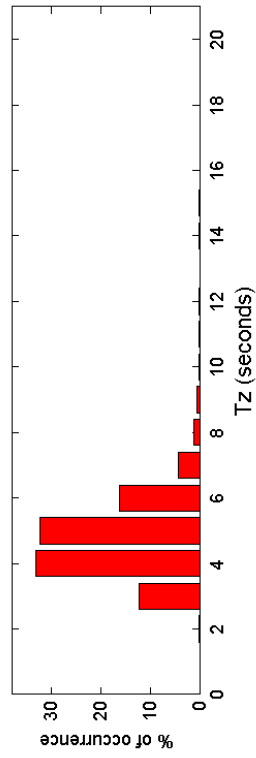
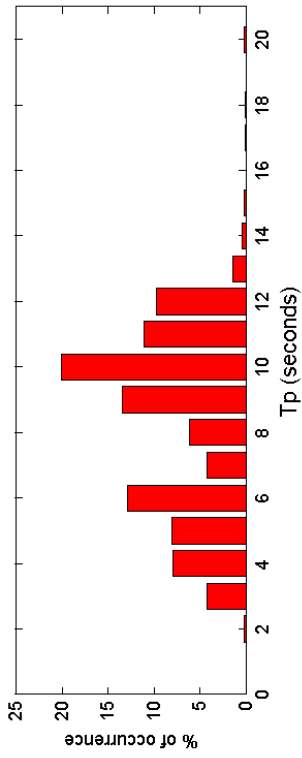
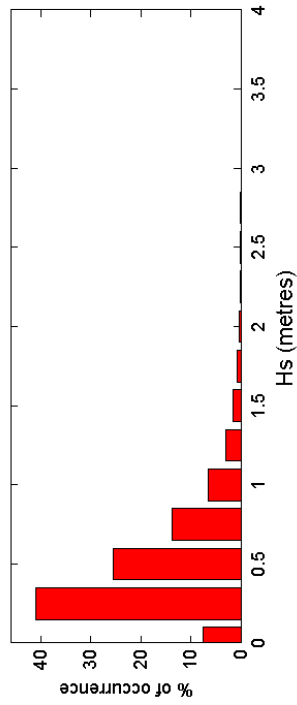
* Tidal information is obtained from the nearest recording tide gauge (the step gauge also provides tidal data). The surge shown is the residual at the time of the highest H_s. The maximum tidal surge is the largest positive surge during the storm event.

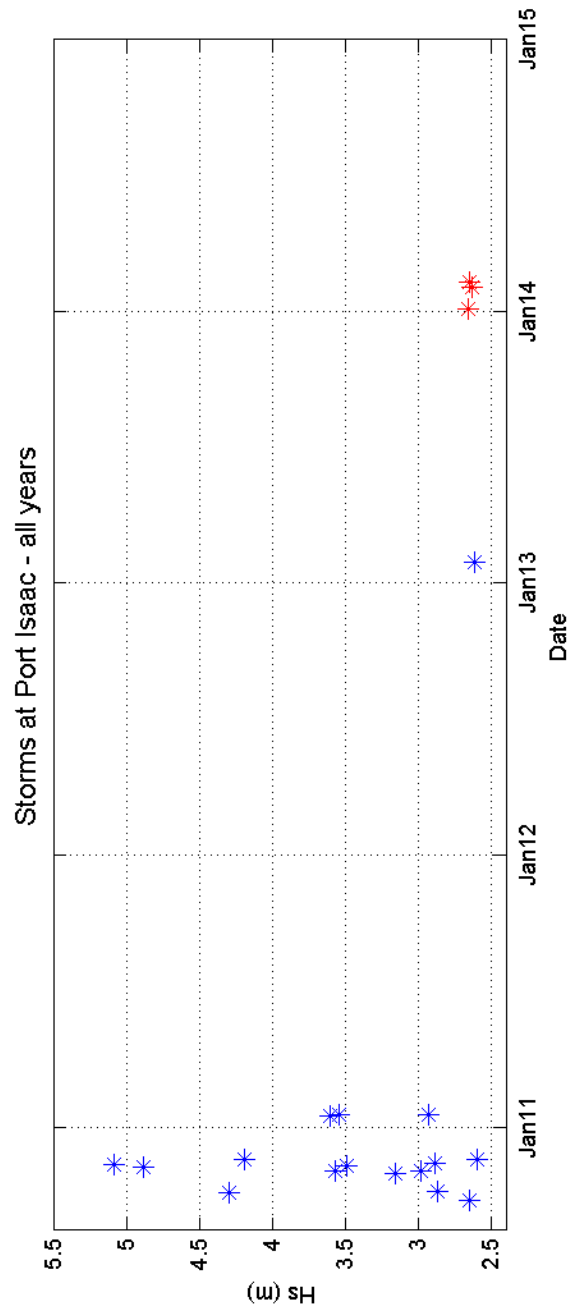
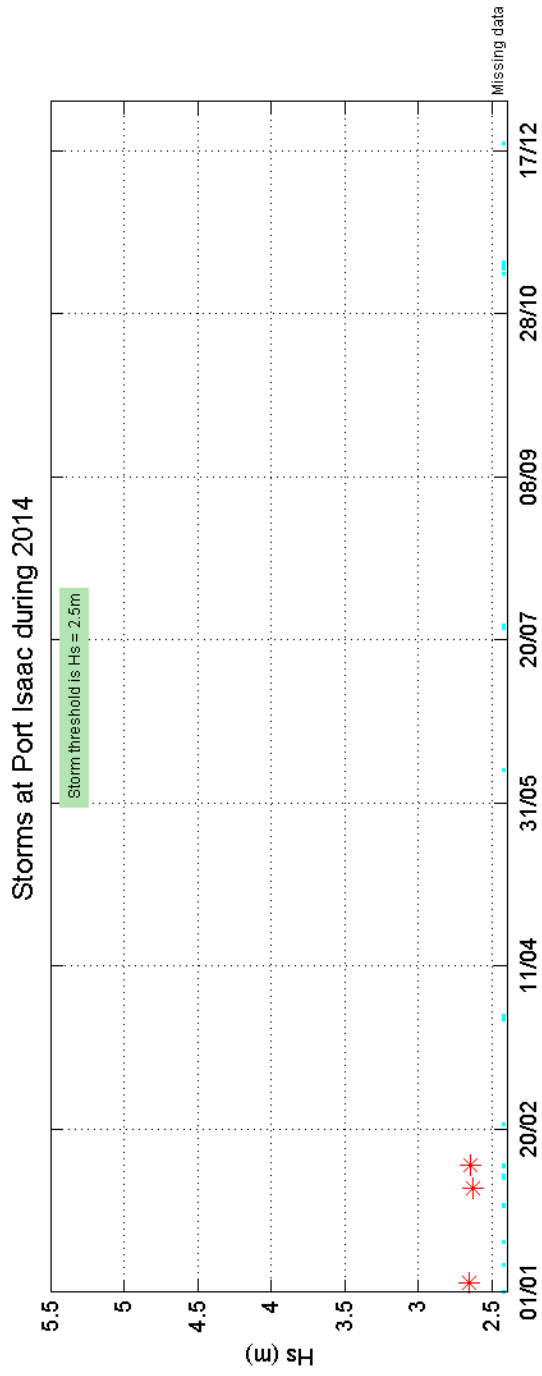
Acknowledgements

The instrument is sited on Port Isaac breakwater by kind permission of Port Isaac Harbour Commissioners, and the shore station is kindly hosted by Port Isaac Aquarium. TASK2000 tidal prediction software was kindly provided by the Permanent Service for Mean Sea Level, Proudman Oceanographic Laboratory.



Port Isaac 2014





Port Isaac 2010 to 2014 - Joint distribution (% of occurrence)

