

## Port Isaac Step Gauge

### Location

OS: 199489E 80998N

WGS84: Latitude: 50° 35.651' N Longitude: 04° 50.065' W

### Water Depth

N/A

### Instrument Type

Etrometa Step Gauge

### Data Quality

Recovery rate (%)	Sample interval
98	20 minutes

### Statistics - 2011

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	1.06	10.7	4.8	-	-	30
February	1.05	16.4	5.9	-	-	28
March	0.48	11.8	4.9	-	-	30
April	0.56	11.4	5.1	-	-	28
May	0.50	9.4	5.0	-	-	30
June	0.35	7.8	4.6	-	-	30
July	0.34	8.2	4.4	-	-	31
August	0.28	8.0	4.4	-	-	31
September	0.60	11.7	5.6	-	-	29
October	0.53	9.8	5.3	-	-	30
November	0.77	11.5	5.5	-	-	30
December	0.96	11.0	5.3	-	-	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)
15-Jan-2011 19:20	3.60	6.5	6.2	-	-0.93	HW +6	2.9	0.24	0.31

\* 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<sub>s</sub>. 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)
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

\* 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:

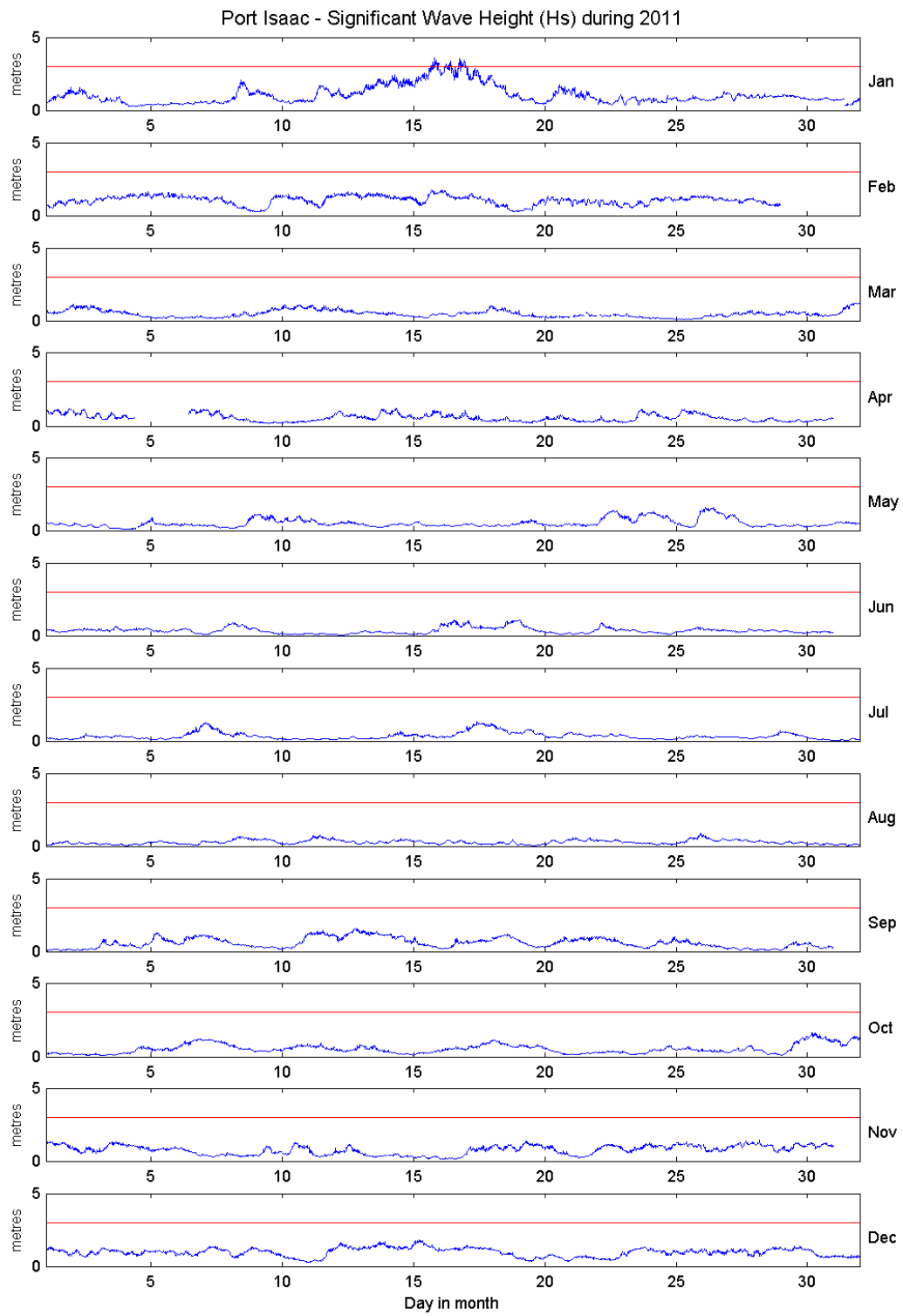
- Annual time series of  $H_s$  (red line is 3.0 m storm threshold)
- Percentage of occurrence of  $H_s$ ,  $T_p$  and  $T_z$  for 2011
- Incidence of storm waves for 2011. Storm events are defined using the Peaks-over-Threshold method. The highest  $H_s$  of each storm event is shown
- Joint distribution of all parameters for all measured data, given as percentage of occurrence

## General

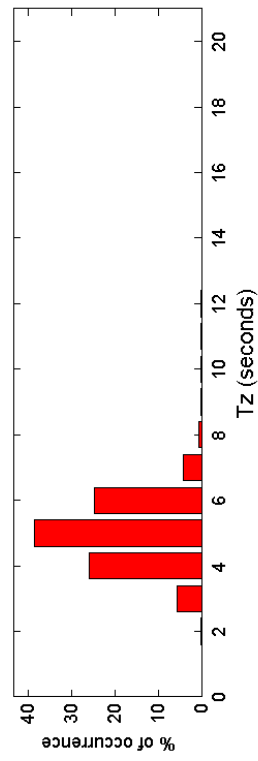
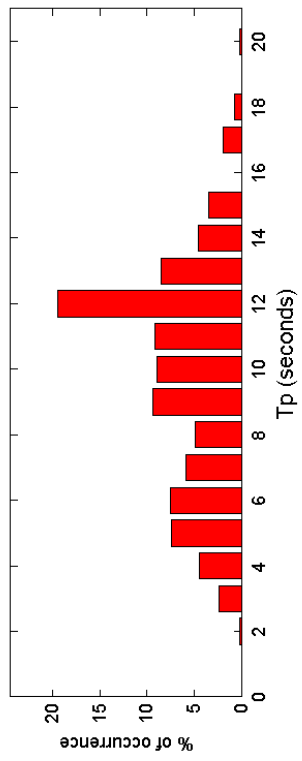
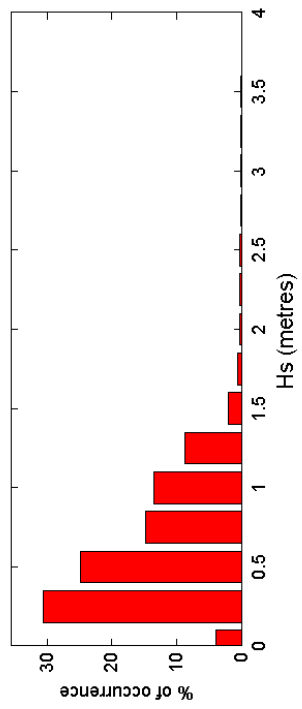
The Step Gauge was installed on 15 July 2010. The instrument is deployed primarily as a tide gauge, but measures waves also. Some reflection can occur from the breakwater on which the instrument is mounted.

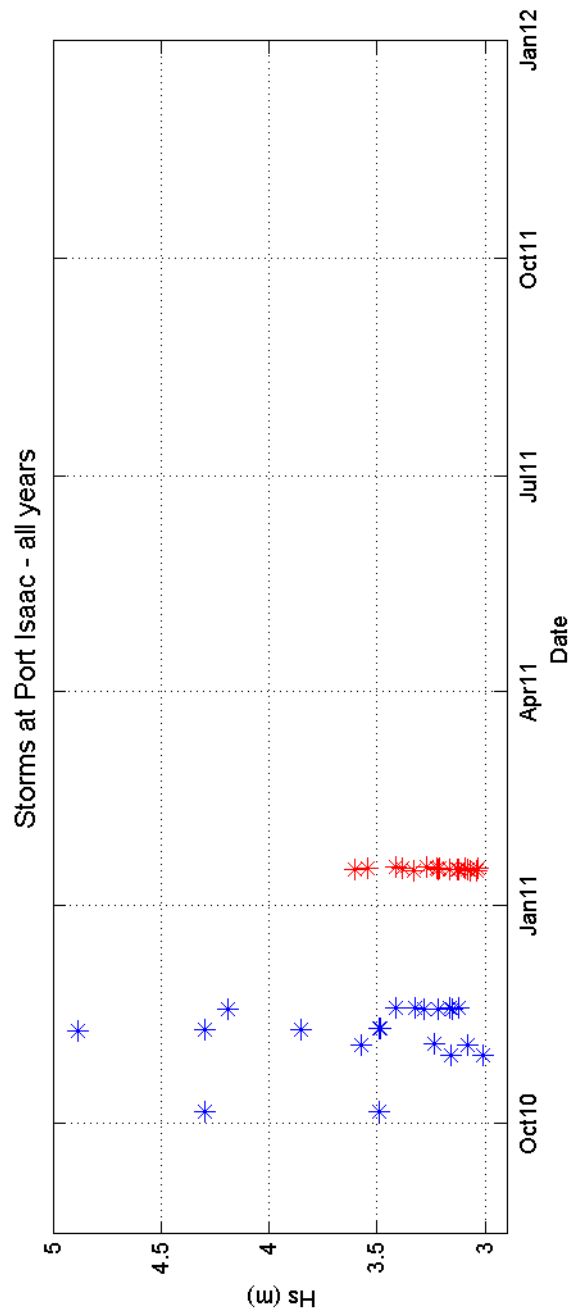
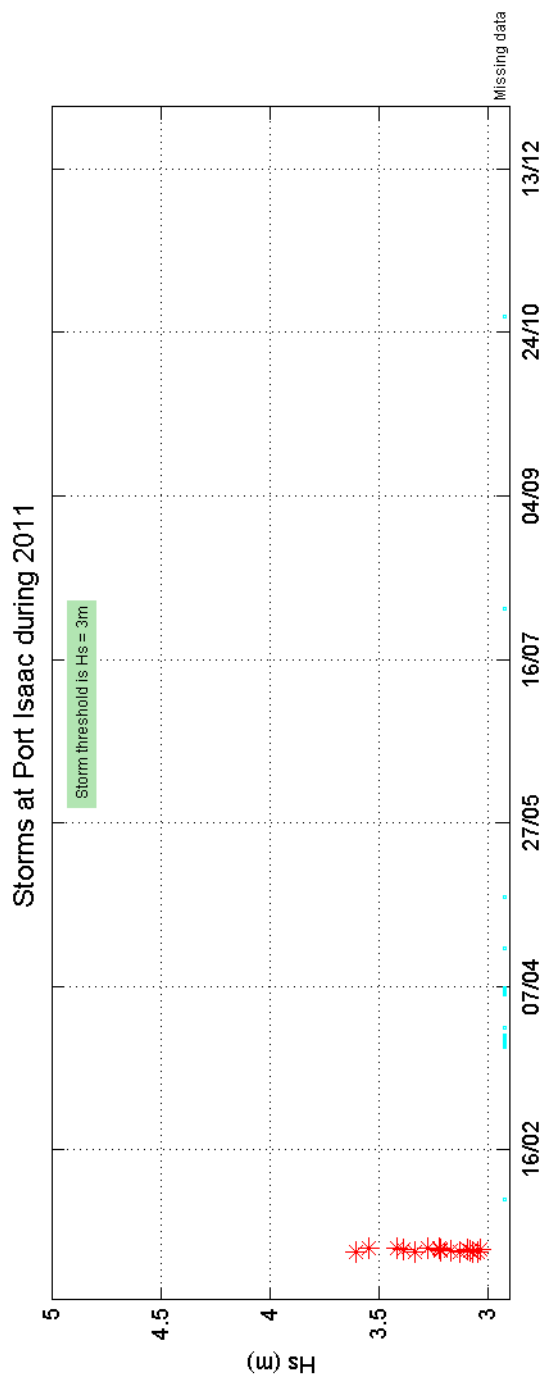
## Acknowledgements

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 2011





Port Isaac 2010 to 2011 - Joint distribution (% of occurrence)

