

Pevensey Bay Directional Waverider Buoy

Location

OS: 570429E 100915N
 WGS84: Latitude: 50° 46.97' N Longitude: 000° 24.97' E

Water Depth

9.8m CD

Instrument Type

Datawell Directional Waverider Buoy Mk III

Data Quality

| C1(%) | Sample interval |
|-------|-----------------|
| 95 | 30 minutes |

Monthly Means

All times are GMT

| Month | H _s | T _p | T _m | Direction | SST | No. of days |
|-----------|----------------|----------------|----------------|-----------|------|-------------|
| | (m) | (s) | (s) | (°) | (°C) | |
| January | 1.47 | 6.8 | 4.4 | 206 | 8.7 | 27 |
| February | 0.88 | 5.7 | 3.7 | 178 | 8.1 | 27 |
| March | 1.04 | 6.5 | 4.0 | 195 | 8.1 | 31 |
| April | 0.68 | 5.3 | 3.5 | 174 | 9.4 | 30 |
| May | 0.53 | 4.7 | 3.2 | 120 | 12.9 | 25 |
| June | 0.59 | 5.2 | 3.4 | 195 | 15.9 | 26 |
| July | 0.68 | 5.2 | 3.5 | 201 | 17.5 | 30 |
| August | 0.84 | 5.2 | 3.6 | 209 | 18.3 | 31 |
| September | 0.79 | 4.9 | 3.5 | 156 | 16.8 | 30 |
| October | 0.88 | 6.1 | 4.0 | 203 | 14.7 | 31 |
| November | 0.89 | 5.7 | 3.8 | 184 | 11.7 | 30 |
| December | 0.79 | 5.9 | 3.8 | 172 | 8.6 | 31 |

Tables and plots of these values, together with the minimum and maximum values and the standard deviation are available on the website.

| Highest storm events in 2008 | | | | | | | | | |
|------------------------------|----------------|----------------|----------------|------|-----------------------------|----------------------------|-----------------|------------------|-----------------|
| Date/Time | H _s | T _p | T _z | Dir. | Water level elevation* (OD) | Tidal stage (hours re. HW) | Tidal range (m) | Tidal surge* (m) | Max. surge* (m) |
| 13-Dec-2008 12:00 | 3.97 | 8.3 | 6.3 | 166 | 2.48 | HW +1 | 5.60 | 0.40 | 0.65 |
| 15-Jan-2008 15:30 | 3.96 | 8.3 | 6.3 | 208 | 2.45 | HW | 4.19 | 0.05 | 0.60 |
| 10-Mar-2008 15:30 | 3.89 | 7.7 | 6.3 | 204 | 1.37 | HW +2 | 6.28 | 0.53 | 0.80 |
| 31-Jan-2008 15:30 | 3.53 | 10.5 | 6.2 | 215 | 0.64 | HW -2 | 2.19 | -0.27 | 0.48 |
| 04-Dec-2008 10:30 | 3.35 | 8.3 | 5.7 | 207 | -0.82 | HW +4 | 3.50 | 0.15 | 0.45 |

* 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 | 3.38 | 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 |

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

Distribution plots

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

- Percentage of occurrence of H_s , T_p , T_z and Direction for 2008
- Percentage wave height exceedance (all recorded years) – note that the statistics for 2003 were based on measurements from July to December only
- Joint distribution of all parameters for 2008, given both as number of observations and as percentage of occurrence
- Cumulative joint distribution of parameters from start of records (percentage of occurrence only)
- Incidence of storms during 2008 and for all previous years. Storms are defined using the Peaks-over-Threshold method. The highest H_s of each storm is shown.
- Annual time series of H_s (red line is storm threshold)

General

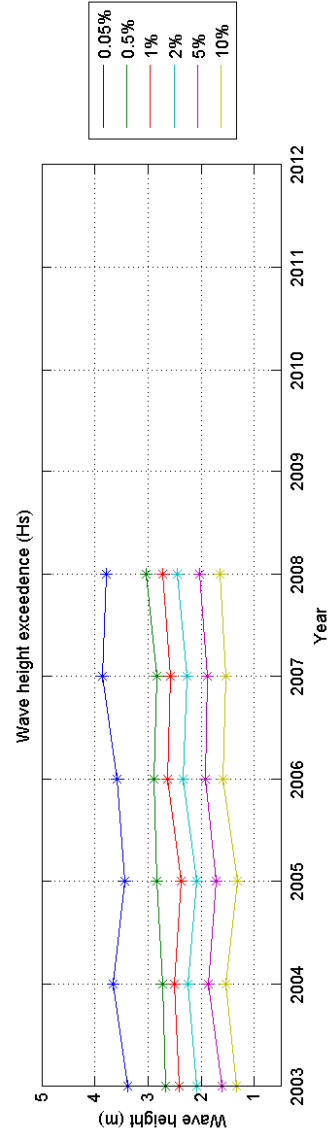
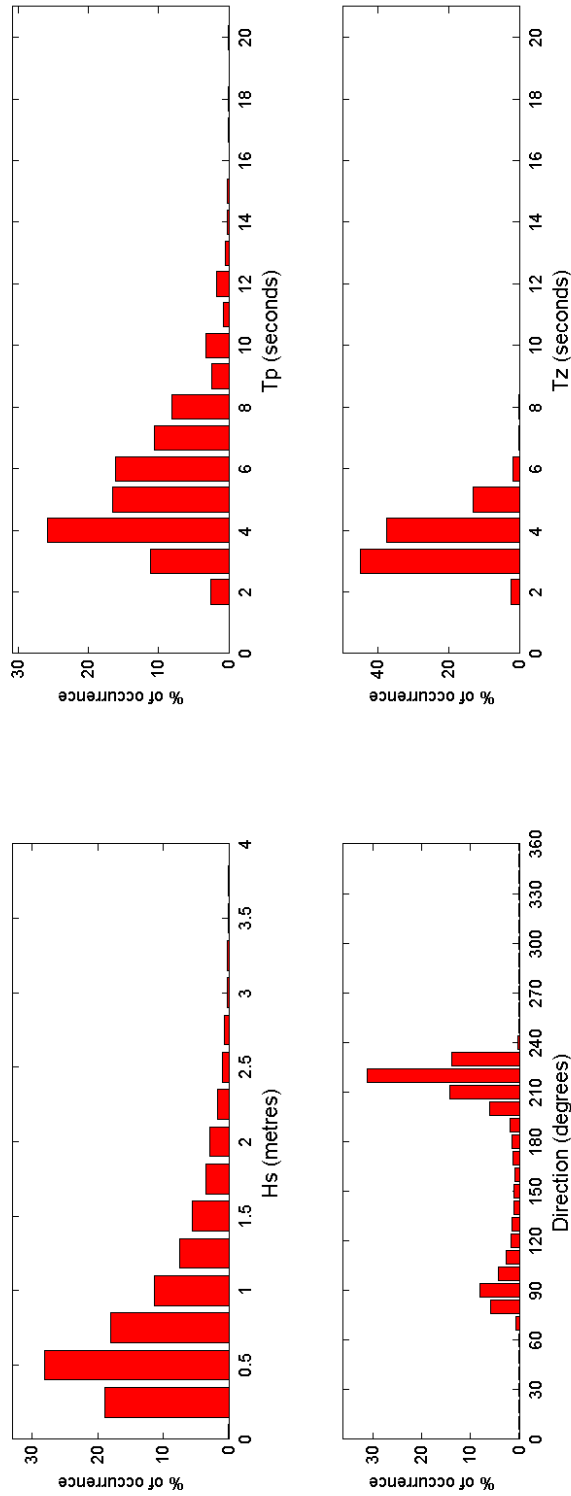
The buoy was first deployed on 8 July 2003. The wave directions recorded by the Datawell Directional Waverider Mk III were found to be contaminated by a significant tidal signature, compounded by the on-board data processing. The buoy received new electronics to fix this problem in late March 2004; wave directions measured before April 2004 were excluded from the analysis.

The buoy came adrift on 26 January and was re-deployed on 29 January. It was serviced and re-battered during May.

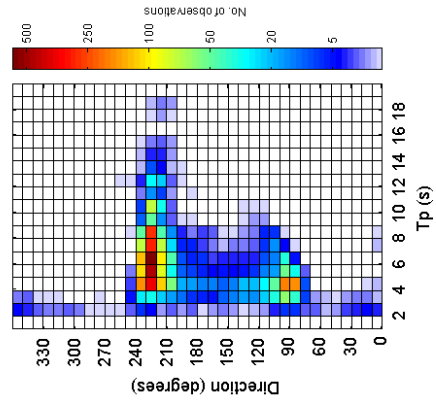
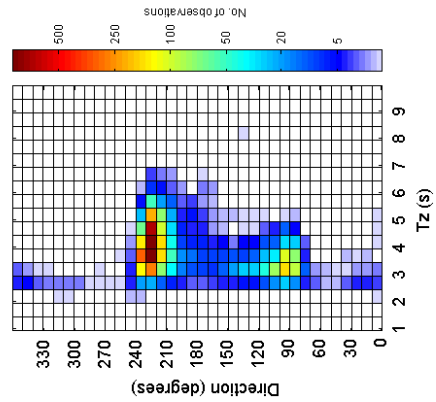
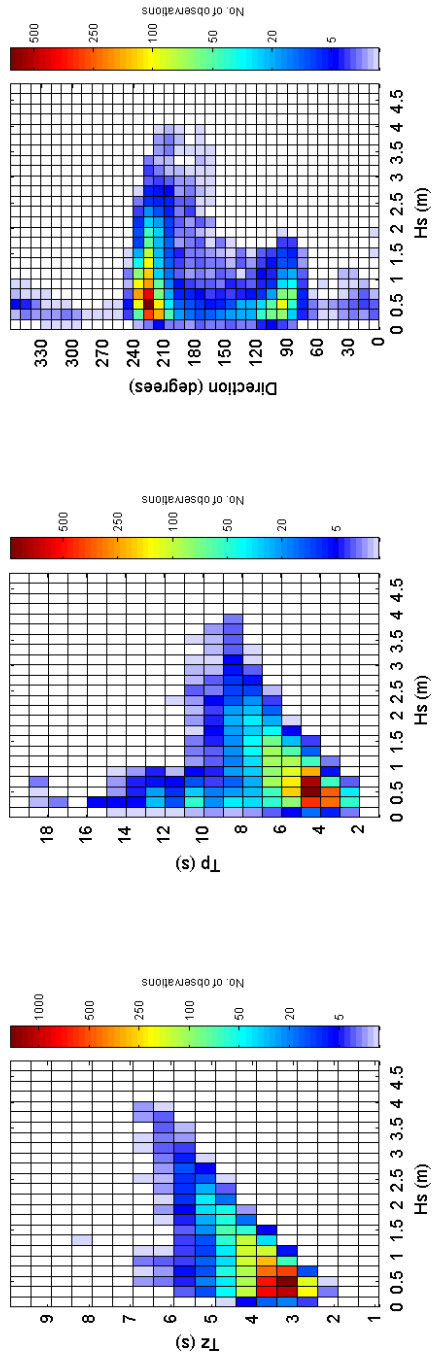
Acknowledgements

Tidal data were supplied by the British Oceanographic Data Centre as part of the function of the National Tidal and Sea Level Facility, hosted by the Proudman Oceanographic Laboratory and funded by DEFRA and the Natural Environment Research Council.

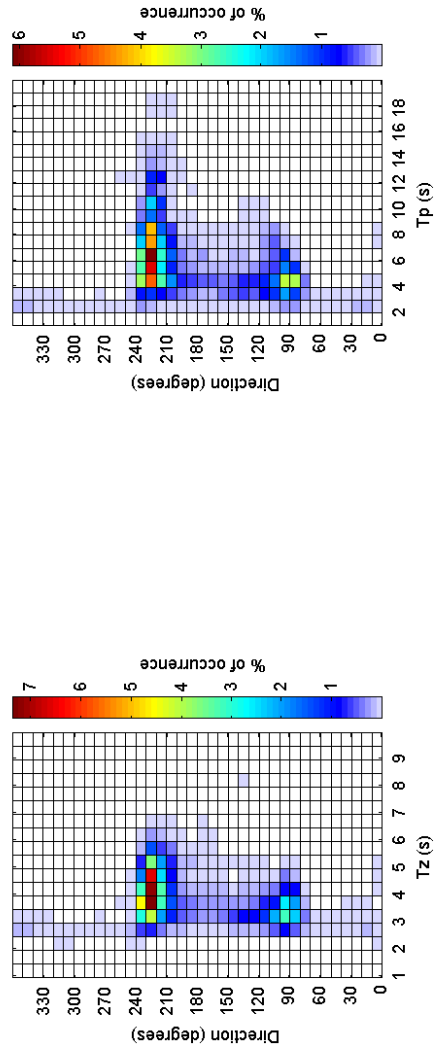
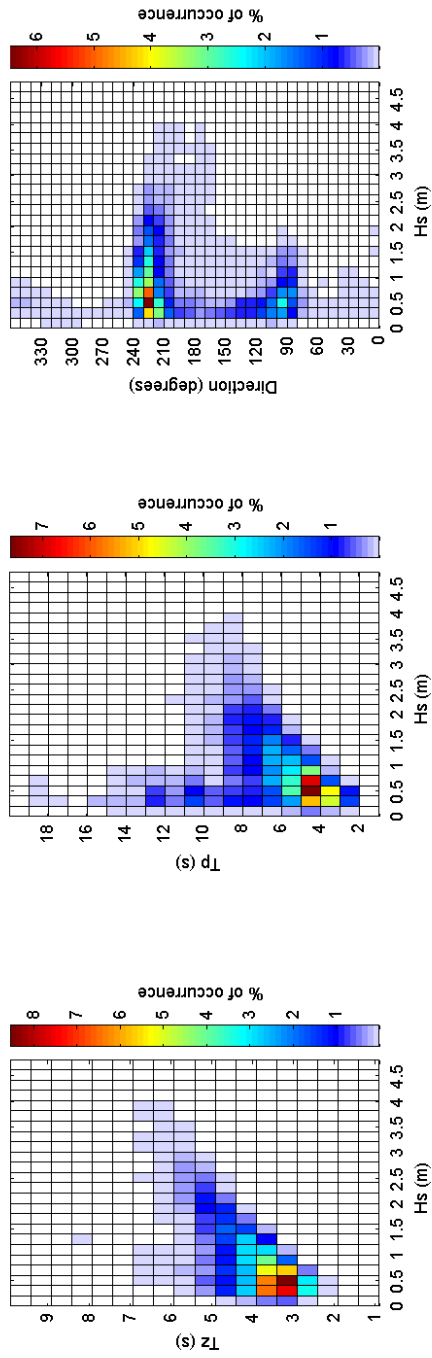
Pevensey Bay 2008



Pevensey Bay 2008 - Joint distribution



Pevensey Bay 2008 - Joint distribution (% of occurrence)



Pevensey Bay 2003 to 2008 - Joint distribution (% of occurrence)

