Milford WaveRider Buoy

Location
OS: 427297E 90361N
WGS84: *Latitude:* 50°42'73" N *Longitude:* 001°36'93" W

Water Depth
Approx. 10m CD

Instrument Type
Datawell WaveRider Buoy Mk II
Datawell WaveRider Buoy Mk III (from 17 Nov 2005)

Data Quality

C1(%)	Sample interval
80	30 minutes

Monthly Means

Milford 2005							
Month	H_s (m)	H_{max} (m)	T_p (s)	T_z (s)	Direction (°)	SST (°C)	No. of days
January	0.702	1.153	-	4.2	-	-	18
February	0.399	0.648	7.9	3.8	-	-	26
March	0.497	0.790	10.1	4.7	-	-	31
April	0.491	0.789	7.5	4.2	-	-	30
May	0.555	0.944	6.8	4.0	-	-	31
June	0.435	0.792	6.7	3.9	-	-	30
July	0.453	0.835	5.5	3.6	-	-	28
August	0.454	0.794	5.5	3.5	-	-	27
September	0.609	2.040	7.7	3.7	-	-	26
October	0.658	2.795	8.0	4.3	-	-	3
November	0.268	0.409	8.3	3.7	218	10.7	13
December	0.614	0.947	9.1	4.5	212	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 2005									
Date/Time	H_s	T_p	T_z	Dir.	Water level elevation * (OD)	Tidal stage	Tidal range (m)	Tidal surge* (m)	Max. surge* (m)
02-Dec-2005 18:30	3.53	9.1	6.7	219	0.02	HW -6	2.2	-	-
28-Sep-2005 21:30	2.47	8.0	5.5	-	0.37	HW -2	1.0	-	-

* *Tidal information is obtained from the nearest recording tide gauge (the gauge on Royal Lymington Yacht Club starting platform). 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.*

Year	Annual H_s exceedance* (m)					Annual Maximum H_s (m)	
	0.5%	1%	2%	5%	10%	Date	A_{max}
1996	2.77	2.43	2.16	1.83	1.46	28-Oct-1996 21:00	4.05
1997	2.39	2.15	1.97	1.59	1.20	24-Feb-1997 23:00	3.32
1998	2.47	2.28	2.00	1.66	1.37	27-Oct-1998 13:00	3.21
1999	2.32	2.11	1.85	1.56	1.29	24-Dec-1999 22:00	3.23
2000	2.85	2.50	2.19	1.74	1.41	31-Dec-2000 19:00	4.09
2001	2.63	2.24	1.91	1.52	1.20	01-Jan-2001 00:00	4.07
2002	2.92	2.61	2.35	1.96	1.62	15-Oct-2002 18:00	4.06
2003	2.20	2.02	1.76	1.37	1.12	14-Nov-2003 15:00	2.92
2004	2.49	2.29	2.05	1.69	1.42	31-Jan-2004 17:00	3.44
2005	1.86	1.72	1.56	1.28	1.05	02-Dec-2005 18:30	3.53

** i.e. 5 % of the H_s values measured in 2004 exceeded 1.69m*

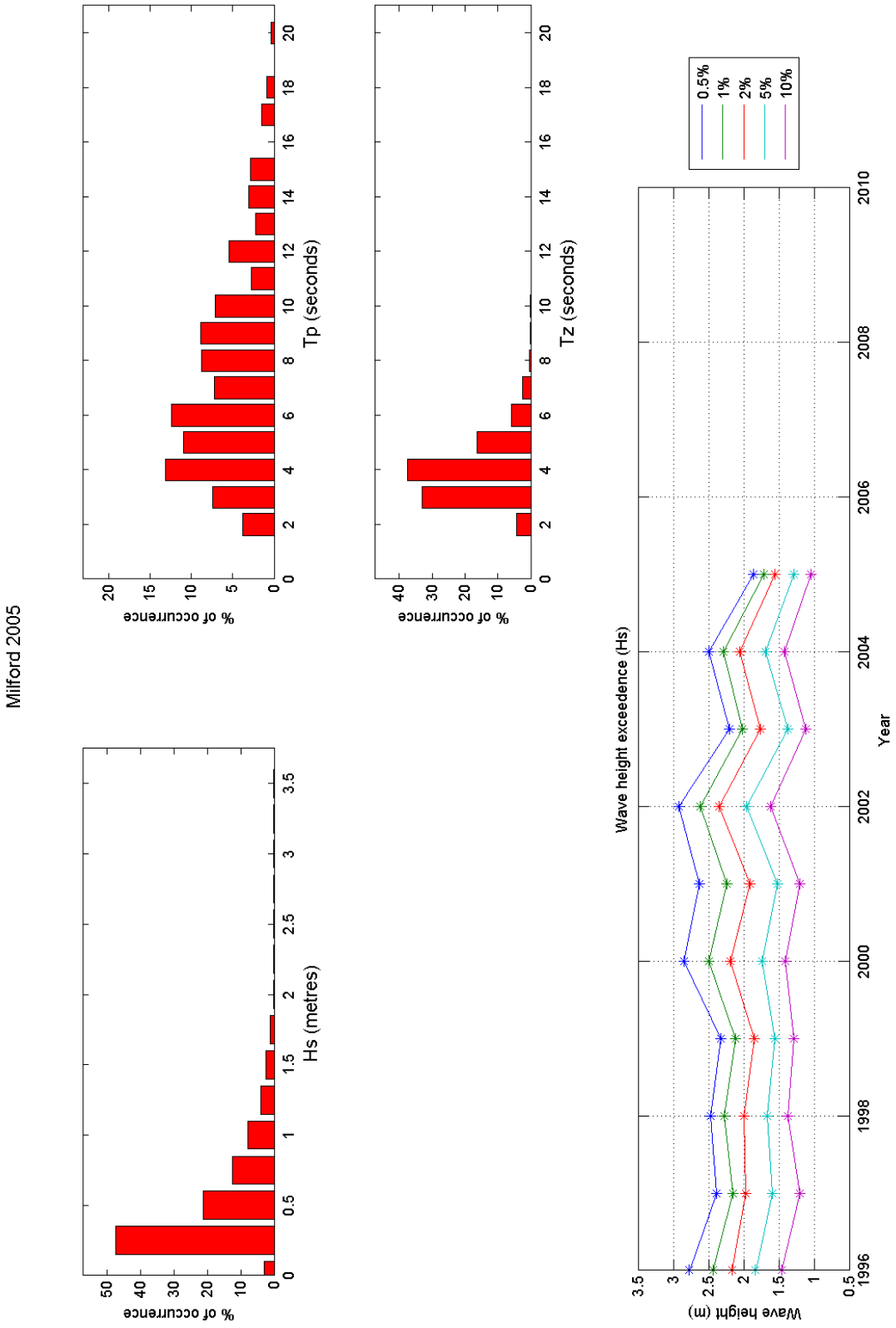
Distribution plots

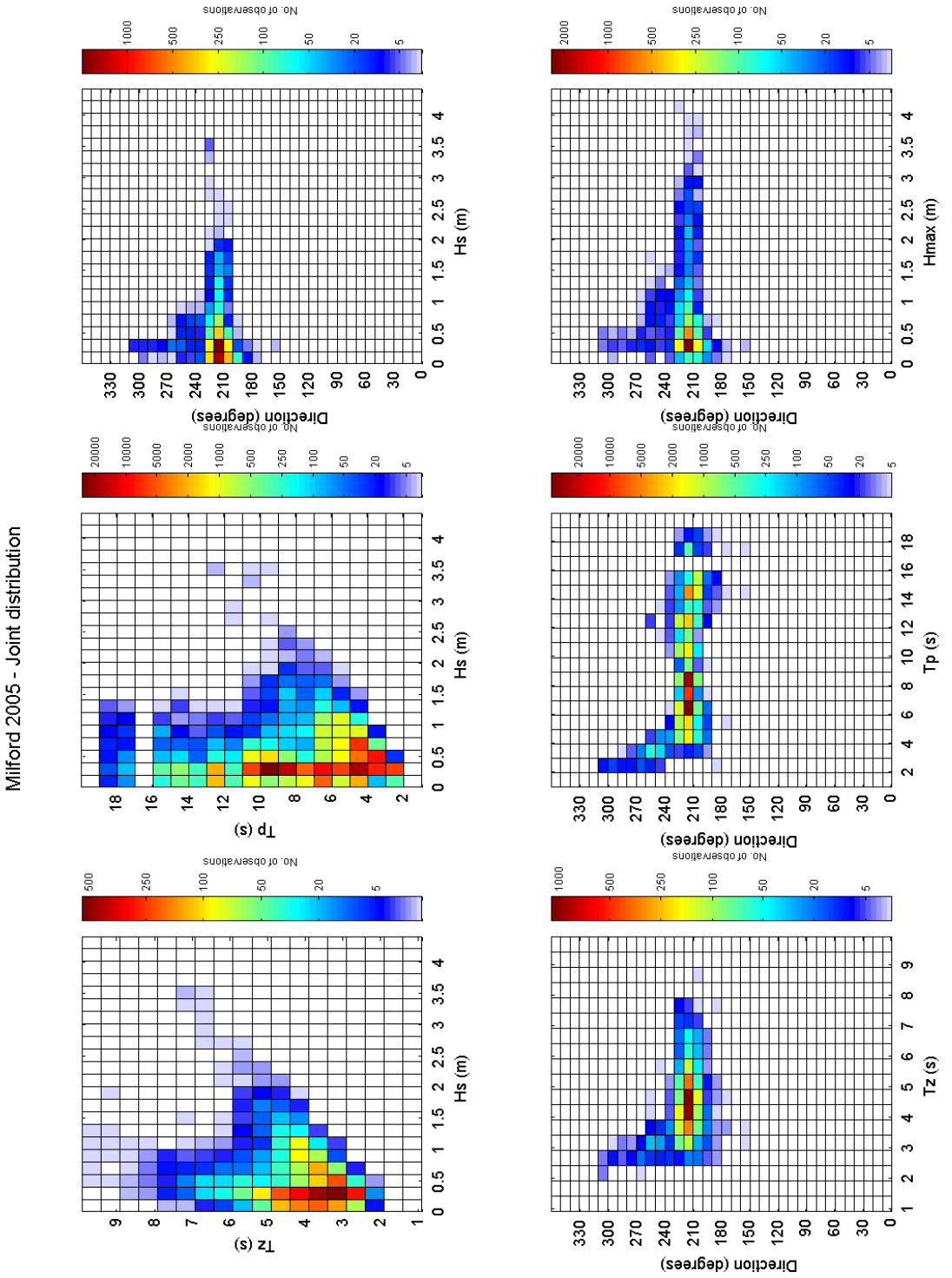
The distribution of wave parameters are shown in the accompanying graphs of:

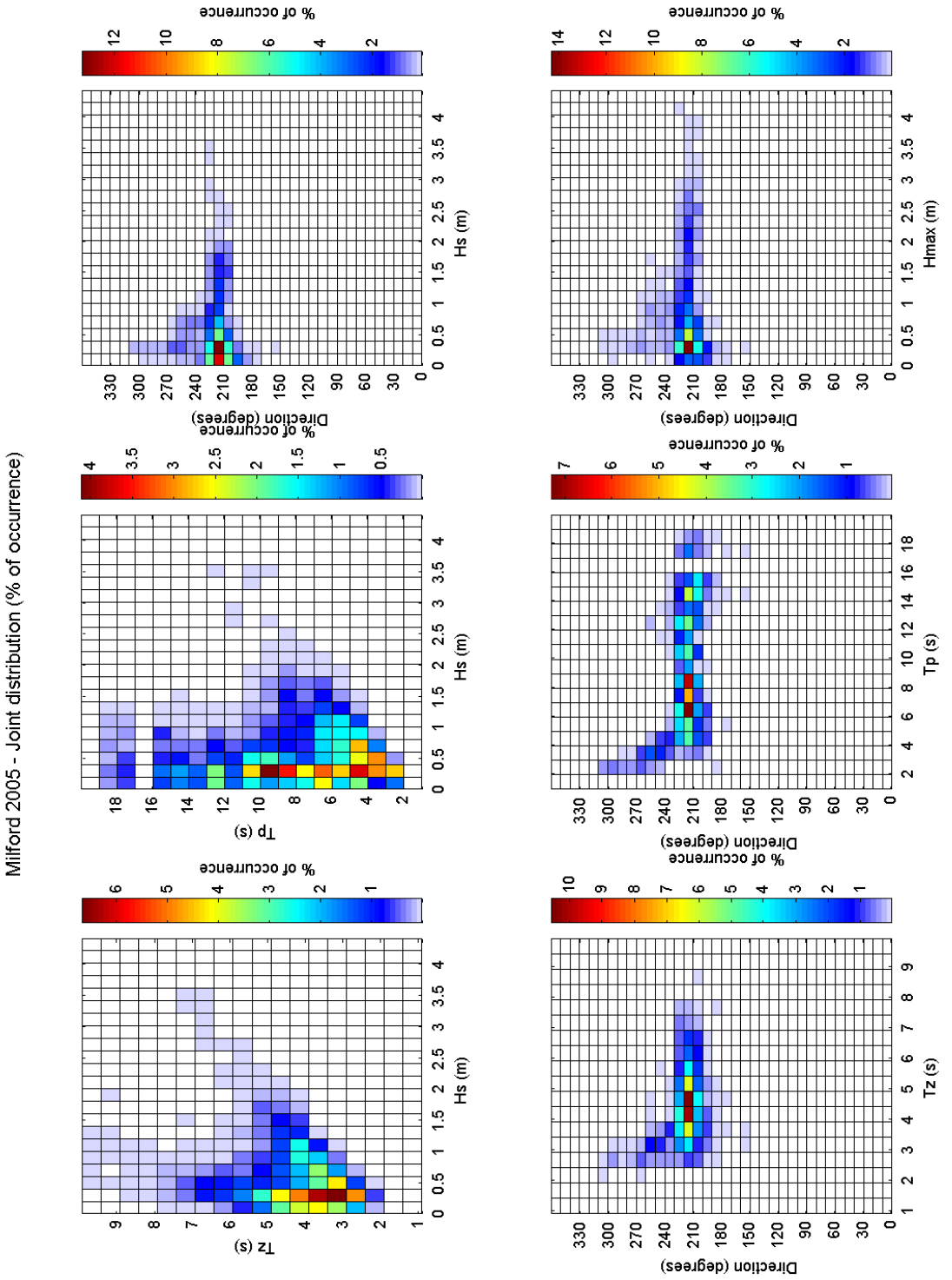
- Percentage of occurrence of H_s, and T_z for 2005
- Percentage wave height exceedance (all recorded years) – note that the statistics for 1996 were based on measurements from May to December only
- Joint distribution of all parameters for 2005, given both as number of observations and as percentage of occurrence – note that measurement of T_p began in December 2004
- Cumulative joint distribution of parameters from start of records (percentage of occurrence only)
- Incidence of storms above a given threshold, for 2005 and for all years. Storms are defined by the Peaks-over-Threshold method. The highest H_s of each storm event is shown.
- Annual time series of H_s (red line is storm waves threshold)

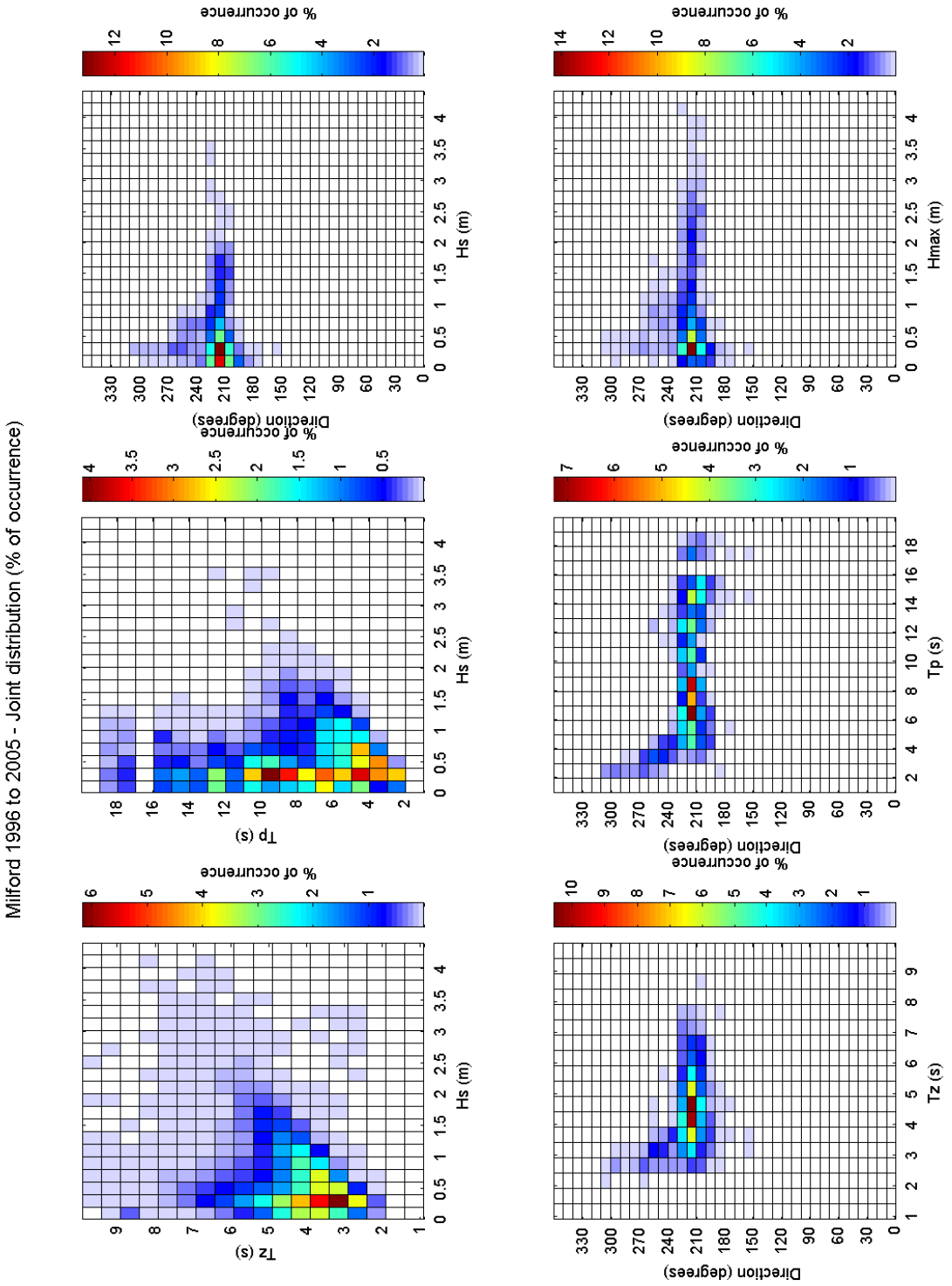
General

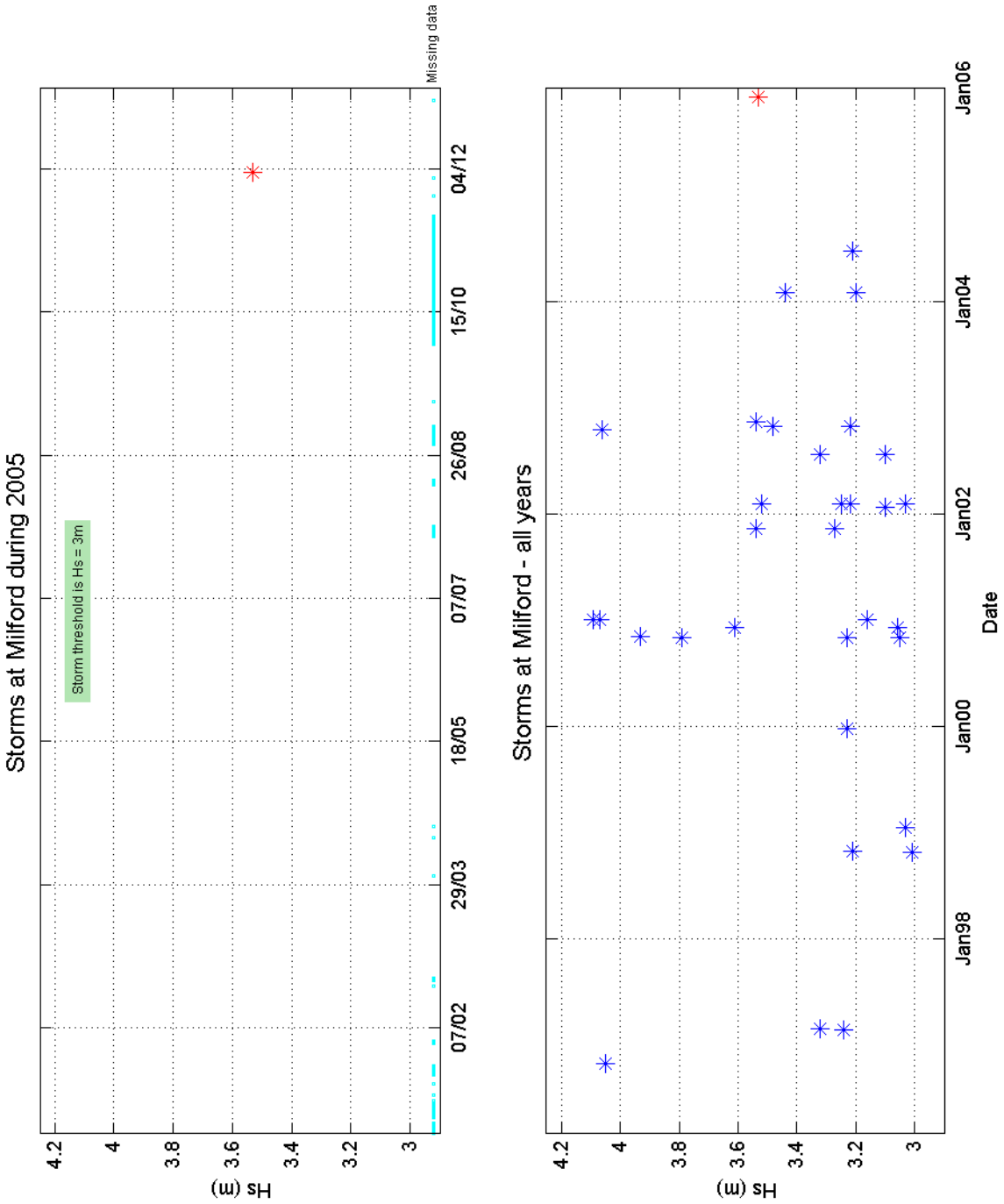
The buoy was first deployed in May 1996. It was badly damaged in early October 2005 and was replaced with a directional wave buoy in mid November, but missed the early November storms.

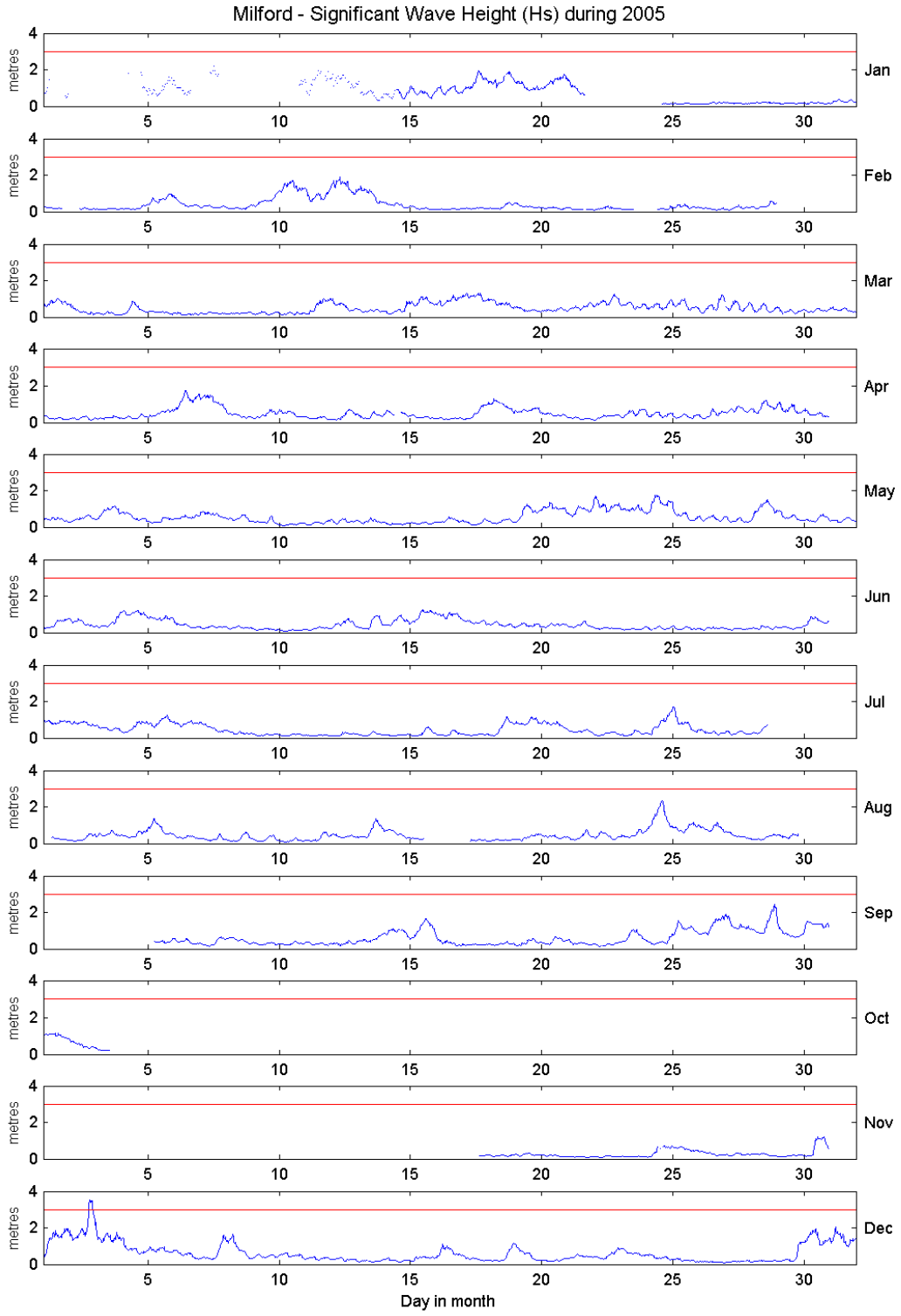

Milford 2005
% of occurrence
Hs (metres)
Tp (seconds)
Tz (seconds)
Wave height exceedence (Hs)
Wave height (m)
Year
0.5%
1%
2%
5%
10%


Milford 2005 - Joint distribution
Direction (degrees)
Hs (m)
Hmax (m)
Tp (s)
Tz (s)
No. of observations


Milford 2005 - Joint distribution (% of occurrence)
Hs (m)
Tz (s)
% of occurrence
Hs (m)
Tp (s)
% of occurrence
Direction (degrees)
Hs (m)
% of occurrence
Direction (degrees)
Tp (s)
% of occurrence
Direction (degrees)
Hmax (m)
% of occurrence
Direction (degrees)
Tz (s)
% of occurrence


Milford 1996 to 2005 - Joint distribution (% of occurrence)
Hs (m)
Tz (s)
% of occurrence
Hs (m)
Tp (s)
% of occurrence
Direction (degrees)
Hmax (m)
% of occurrence
Direction (degrees)
Tp (s)
% of occurrence
Direction (degrees)
Tz (s)
% of occurrence


Storms at Milford during 2005
Storm threshold is Hs = 3m
Missing data
Hs (m)
4.2
4
3.8
3.6
3.4
3.2
3
07/02
29/03
18/05
07/07
26/08
15/10
04/12
Storms at Milford - all years
Hs (m)
Jan98
Jan00
Jan02
Jan04
Jan06
Date


Milford - Significant Wave Height (Hs) during 2005
metres
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Day in month