LATEST NEWS: Data updates will be affected by a planned power outage Wednesday 20 March 7am - 10am

Processing change: Tp and Dp for Datawell directional buoys October-November, 2005

On October 26, 2005, two changes were made to the spectral and parameter processing of Datawell directional buoys:

- The frequency assigned to the 16th band in the spectrum was changed to 0.10125 Hz (where T = 9.88 seconds) from Datawell's value of 0.100 Hz (or T = 10.0 seconds). The new values represent the band's true midpoint.
- The calculation of the peak period (Tp) and peak direction (Dp) for each spectral file was changed to select the spectral band with the highest energy density as the peak band. Previously, the band with the highest energy (i.e. energy_density * band_width) was being selected for the calculation of Tp and Dp.

Historic buoy data was reprocessed to apply these changes consistently to all Datawell buoy records, modifying values in both the pm files and the sp files (as well as the corresponding plots). Reprocessing finished on November 17, 2005.

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DATAWELL BUOY PROCESSING CHANGES - OCTOBER 25 2005
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In October 2005 the processing for all data from Datawell
directional buoys was modified. All historical buoy data
has been reprocessed to apply these changes.

Two changes were made:

1) Tp for the pm/sp files is calculated as the band with
   the highest energy density, not the highest energy;

2) The 16th freq band is calculated as 0.10125 Hz - the true
   band midpoint - instead of as 0.1000, which is how
   Datawell labels it. (This is the 'transition band',
   the only band in the Datawell spectra with a band width
   of 0.0075 Hz.)

These changes result in significant changes to the pm
files. A peak period of 10 seconds is no longer possible;
that band is now labeled 9.88 seconds. And some records which
showed peak periods below 10 seconds will now have peak
periods above ten seconds, where the band width is narrower.

For some stations where there is often a near-equal mix
of sea and swell, the change can be dramatic: for 095
in September 2005, a almost 30% of the pm entries have new
peak periods (and directions) with the new processing. More
stats are below.

  New vs. old processing, Tp and Dp changes in spectral (sp)
  and parameter(pm) products:

  095, 200509
  1439 records; 429 change   (29.8%)
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  172, 200509
  1404 records; 184 change   (13.1%)

  029, 200509
  1438 records; 316 change   (22.0%)


In the 9-band products (de and dd files), change #2 results
in the shifting of the 16th band's energy from the 10-12
second bin to the 8-10 second bin. This may occasionally
affect the 9-band Tp and Dp values, but not as many records
will be affected as in the pm files.
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