Wind Rose and Graphics

Why do two files (in different formats) with the same data show different wind roses?

In some meteorological files, wind directions are reported to the nearest 10 degrees. To avoid a bias in the wind rose plots toward the cardinal compass points (N, S, E, and W), WRPLOT randomizes the wind directions for each 10 degree sector to one degree increments based on the same random number set used by the PCRAMMET meteorological preprocessor.

A bias would occur for unrandomized wind directions because three 10-degree sectors would contribute to the N, S, E, and W sectors (e.g., 350, 360 and 10 degrees for the north sector), while only two 10-degree sectors would contribute to the other 22.5 degree sectors. The plots produced by WRPLOT View represent the same statistics that would be generated from the randomized flow vectors in a PCRAMMET preprocessed meteorological data file.

The following data formats have the randomize feature applied:

- SCRAM format
- CD-144 format

The following data formats do not have the randomize feature applied:

- SAMSON format
- HUSWO format
- AERMET processed surface format
- AERMET processed profile format
- RAMMET processed format
- Lakes Format

Of the two files being compared, if one of the files is in a format that is being randomized, and the other is not, the results will be different.

Another reason that results from the two files may appear different is that some files record wind speed in knots, while others record wind speed in m/s. Ensure that you are comparing wind speeds in the same units.

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