

Interactive comment on “On the variability of Florida Straits and wind driven transports at 26° N in the Atlantic Ocean” by C. P. Atkinson et al.

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This is a remarkably comprehensive paper; thorough, interesting, and well written. It struggles of course with the usual compromises: how to present a great deal of data in a limited space. Many of the figures are too small to be really useful in any quantitative sense but it is hard to know how to avoid that, except perhaps for making larger versions available for downloading. Figure 2, for example, is so clear and meaningful that one wonders if it were done by someone else than the person(s) who did Figures 1 or 10.

We have known for a long time that the "mean annual cycle" emerges only from a record of many years duration. Their exposition of this is nice. However, with the results from Figure 2, the reader will ask, Do these add up? to what extent are these three results in agreement? We assume that the purpose is to understand what is the

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forcing of the variability, but one cannot do the numerical additions "by eye." I see no discussion of this.

One can always find a few quibbles. The authors write, for example:

"Treating each harmonic as an independent estimate of the seasonal cycle, the harmonic coefficients representing the 1980–2007 Florida Straits mean seasonal cycle can therefore be quantified including confidence intervals. These are presented in Table 1." Confidence limits are usually computed when we believe we have multiple measurements of "the same thing." In this case, the variability from year to year is real; it would be nice if the authors made a somewhat clearer distinction between real physical variability as opposed to statistical reliability.

There is almost no mention of how the calculations of actual ocean transport are done from RAPID. It would be particularly helpful to see some discussion of the possible errors inherent in the measurements, rather than such an essentially statistical approach w/o regard to errors in the data. The authors seem to assume that the reader will know all the details of the RAPID measurements, altho' many will not. The issue of genuine error in oceanographic data is a thorny problem, to be sure, but it should not be ignored. Computing transport from measurements at the edges is a clever way to avoid the internal variability, but it is non-trivial, as a great deal of transport can be found along the sloping boundaries.

The plots are clear, but the presentations of power spectra are separated from the coherence; if power is unusually low in either of the input variables, the coherence can be artificially high. Perhaps the authors have allowed for this but it is not clear to the reader.

It is surprising that the authors do not refer to the earlier work of Mayer and Weisberg, who made a more limited study of many of these issues.

The paper is focused strongly on the annual cycle of variability, rather than variability

of transport in the broader sense; I believe it would be helpful if the title were clear on this point. I enjoyed reading the paper.

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