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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Observation of a tidal effect on the Polar Jet Stream" *by* C. H. Best and R. Madrigali

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In the paper we used the analogy of coin tossing to calculate the probability of observing 40/46 coincidences of negative AO peaks with tidal forces in winter. This is the origin of the quoted >99% probability that the effect is real. Since then NOAA has published new AO data for the current winter 2015/16 as shown in the attached figure. This further supports the conclusion that a tidal effect on the Jet Stream is correct. Provisional data for February 2016 show a continuation of this trend with an AO minimum coinciding with the new moon spring tide at 8 February. (see: http://www.cpc.ncep.noaa.gov/products/precip/CWlink/daily_ao_index/ao.sprd2.gif)

The small overall negative correlation of the AO with tides is also statistically significant.

Figure 2 shows the last 10 years of daily AO data. The Spearman correlation of all daily data since 1950 with 45N tides may be only -0.02 when including summer months, but this still has a signal to background of 3 sigma, equating to > 99% probability of an effect.

Interactive comment on Atmos. Chem. Phys. Discuss., 15, 22701, 2015.

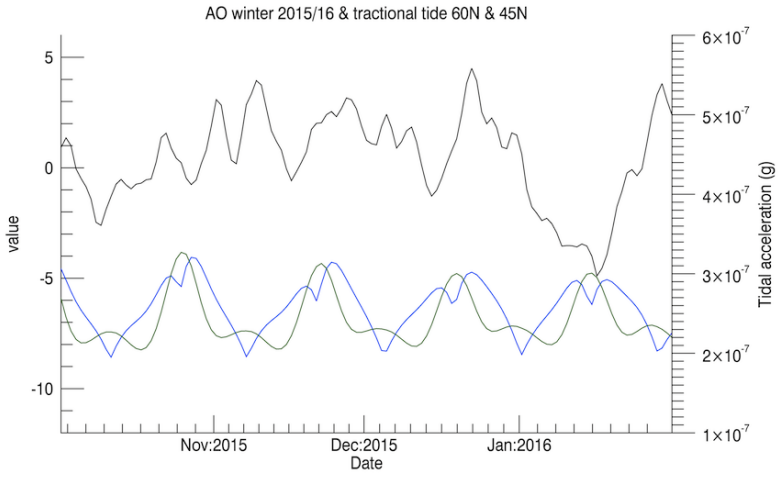

Fig. 1. Winter 2015/16

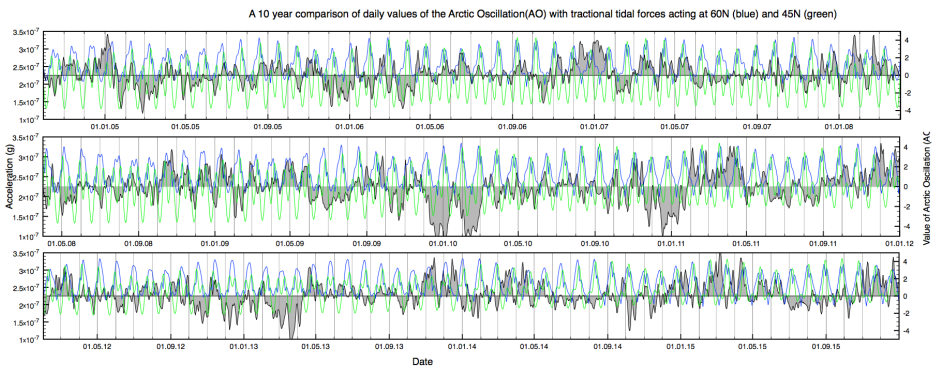

Fig. 2. Comparison of last 10 years AO data