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Interactive comment on "Statistical climatology of mid-latitude mesospheric summer echoes characterised by OSWIN radar observations" *by* Dimitry Pokhotelov et al.

Anonymous Referee #2

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This paper describes the statistics of 12 years of mid-latitude mesospheric summer echoes observed with a VHF radar in Kuhlungsborn, Germany. The MSE seasonal and local time variations are presented. Most importantly, correlations between MSEs and solar, geomagnetic indexes and meridional winds are discussed.

The major weakness of this paper is its lack of new knowledge reported. For example, the fact that the occurrence of MSEs is lower than its polar counterpart is well known, so is its daytime preference (ionization needed). The correlations (or uncorrelation) between MSEs and solar and geomagnetic indices or meridoinal winds are not rigidly characterized. Figures 5-6: better analysis could be performed, e.g., scattering plots

between occurrence and v, Kp, F10.7, AE. What are the correlation coefficients? How significant they are? What new sciences this paper brings with a few more years of data?

Most importantly, Kuhlungsborn has famous long-term NLC observations. To test the theory of southward cold air advection, can some correlative study be carried between MSEs and NLCs at Kuhlungsborn? How about mesopause temperature at Kuhlungsborn?

Minor points:

1. page 1, line 23 "cold mesosphere", mesopause might be a more accurate word.

2. page 2, line 1, "advect the existing PMSEs" can it be "NLCs" adevected from north and ionized at mid latitudes?

3. page 2, line 20: suggest "a specular meteor radar", "which factors", "play significant roles"

4. Figure 2. The summer wind could be zoomed in by removing winter months. And contour lines can be added. It's difficult to tell the difference between June and Aug, which is a main point in this paper.

5.

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