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Interactive comment on "Revisiting the Relationship between Atlantic Dust and Tropical Cyclone Activity using Aerosol Optical Depth Reanalyses: 2003–2018" *by* Peng Xian et al.

Anonymous Referee #1

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The authors have demonstrated that the use of a multi-model ensemble methodology can be applied to the Aerosol reanalyses to produce a more useful and higher quality product that spans a long enough period for statistical analysis (MRC). The quality and utility of this approach is not overly surprising given the performance of the ICAP multi-model ensemble already described in the literature for NWP, but it demonstrated clearly in the comparisons against AERONET observations. As the impact of mineral dust on the development of Atlantic Hurricanes has been a long standing question, with a variety of conflicting analyses and hypotheses, the application of the this long-running and high quality MRC data is a valuable contribution to the question at hand. Because the MRC has both these qualities, the results are particularly convincing. The

main result, in figure 5, that dust AOD is negatively correlated with Atlantic Hurricanes, and the subsequent analysis that this is probably dominated not by the dust itself, but by the circulation patterns associated with the dusty years, is a useful and important result.

Interactive comment on Atmos. Chem. Phys. Discuss., https://doi.org/10.5194/acp-2020-287, 2020.