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Comment on acp-2021-889

Anonymous Referee #1

Referee comment on "Evolution of turbulent kinetic energy during the entire sandstorm process" by Hongyou Liu et al., Atmos. Chem. Phys. Discuss., https://doi.org/10.5194/acp-2021-889-RC1, 2021

The authors investigated the entire sandstorm process (including the rising stage, the steady stage and the declining stage) to reveal the turbulent kinetic energy evolution. They proposed an adaptive segmented stationary method to separate the wind velocity series of a sandstrom. On this basis, the pre-multiplied spectra and bispectrum were analyzed during the sandstrom. The results indicate that the LSMs/VLSMs are active structures with strong nonlinear interactions and increase the wind velocity in the rising stage. As sandstrom evolves, these large structures are gradually broken by quadratic phase coupling and the energy fraction of VLSMs is the smallest in the declining stage. The systematic bispectrum results provide a new perspective for further insight of sandstroms. The authors collected dependent data, chosen suitable model, and tested it fully. The conclusion is reliable and suggestive. I am very impressed by the study, and approve the manuscript to be accepted as is.