

Interactive comment on “Surface layer similarity in the nocturnal boundary layer: the application of Hilbert-Huang transform” by J. Hong et al.

Anonymous Referee #2

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1. general comments

The authors have made a contribution to understanding the non-turbulent motions on surface layer scaling. This paper provides not only application of the new methodology but also evidence of the former studies. There is, however, a few insufficiency of explanation, and so, in my opinion, it should be published with some improvement.

2. specific comments

*Page9684-Line17to21 Which data is used in this analysis? (synthesizing all of three sats?)

Page9686-Line7 "as s/L increase, $\psi_m = \ln(z/z_0) - k_u u^$ linearly ..." Does this sentence mention Fig.7 ?

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*Page9686-Line15 "A plausible explanation is ..." Why normalized variance of c is constant when its vertical gradient is not zero?

*Page9686-Line21to24 "... with increased contribution of turbulent transport term..." The explanation of the TKE equation and its transport term seems not enough. It also helps readers a lot to note the characteristics of transport term under the z-less turbulent condition.

*Fig.4 "... calculated after removing seven IMFs to contribute at low frequency" How the threshold of removing low frequency contribution was determined?

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