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comment**

Interactive comment on "Influence of boundary layer structure on air quality in Beijing: Long-term analysis based on self-organizing maps" *by* Zhiheng Liao et al.

Anonymous Referee #1

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This manuscript uses an unsupervised machine learning to understand the relationships between boundary layer

structure and air quality. The analyses are based on four year measurements, and long-term analysis of measurement

is quite limited in China. I would recommend it for publication after some improvements. Detailed comments are

listed below: 1. The authors should carefully check the language and grammar. For example, 'feather' is used many times, but it

should be 'feature'. Language problems are in other places as well. 2. Line 63-64: There is no evidence to support this point. Weak surface wind and stable boundary layer stratification

do not necessarily mean regional transport cannot happen. Many studies have confirmed the roles of regional

transport during haze. 3. The title of 3.2 'Evaluation against meteorological data' is not appropriate. Fig. 3 shows the characteristics of

meteorological variables for each classified type 4. Line 229-239: This explanation is not solid, at least not complete. It is more likely that the increasing stability

promotes the accumaltion of aerosols, and strong aerosol-radiaiton interactions inhibit photochemistry.

Interactive comment on Atmos. Chem. Phys. Discuss., https://doi.org/10.5194/acp-2017-1046, 2017.