

The manuscript focuses on establishing a robust dataset of tropospheric aerosol properties over the Tibetan Plateau (TP) using CALIOP data from 2007-2020. The study provides a new vertical aerosol index (AI) parameter, extracted observations, which is comprehensively validated. The research highlights the unique climate and geographical features of the TP and the challenges in data collection for this region. The findings offer insights into the aerosol climatology of this region. I believe this paper can be published in ESSD with a few minor changes:

Minor comments:

1. Line 42 contains a repetitive phrase regarding data validation. It would be clearer if rephrased to "...which was rigorously quality-checked and validated..."
2. Line 66 needs an article for readability: "...have a crucial role..."
3. Line 118: I suggest change it to "...mainly due to the lack of a long-term ..."
4. Line 121: I suggest change it to "...vertical dataset..."
5. Line 148: "...better lead..." to "...better leads..."
6. Additionally, a grammar check is recommended to refine the paper's language and clarity.