

Atmos. Meas. Tech. Discuss., referee comment RC1
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Comment on amt-2022-5

Anonymous Referee #1

Referee comment on "Validation of StreamLine XR Doppler LiDAR wind observations using in-situ measurements and WRF simulations" by Tamir Tzadok et al., Atmos. Meas. Tech. Discuss., <https://doi.org/10.5194/amt-2022-5-RC1>, 2022

General: The author compared Halo doppler lidar using several scanning configurations with several in-situ wind measurement instruments, discussed analysis of boundary layer structure using retrieved Halo backscatter signals and wind measurements in conjunction with WRF simulations and demonstrated restoration of Halo wind data with low SNR regions combined with WRF simulations. While this is a moderately interesting piece of work, it contains nothing particularly new. This paper is significantly lacking in a number of areas in including writing, and scientific content. The paper can be acceptable with major revisions.

- Author should discuss uncertainties for these instruments (tethered balloon, meteorological mast, and radiosondes).
- The author should consider the influence of weather conditions on lidar wind retrieval with different elevation angles.
- I think a 30-minute averaging time is too long and will remove some features of wind speeds and direction.
- How many wind profiles are used to get Tab.2?.
- I am concerned about the fig.9 and 10.

5.1 Aerosol density above 2000 m from 5:30 and 6:00 is higher than from 17:30 and 18:00. However, lidar background noise is low at night. Combing them, author should show SNR of Halo to prove it.

5.2 Aerosol density between 1500m and 2000 m from 5:30 and 6:00 is lower than from 17:30 and 18:00. However, the wind difference of lidar and radiosonde between 1500m and 2000 m from 5:30 and 6:00 is still better than from 17:30 and 18:00. Can author explain it and what cause it?

