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Reply on RC1

Yuan Xia et al.

Author comment on "Significant enhancements of the mesospheric Na layer bottom below 75□km observed by a full-diurnal-cycle lidar at Beijing (40.41°□N, 116.01°□E), China" by Yuan Xia et al., Atmos. Chem. Phys. Discuss., https://doi.org/10.5194/acp-2022-112-AC1, 2022

We sincerely appreciate your positive judgment of our work. In accordance with the comments and suggestions from reviewer 2, some revisions have been made to the Discussion section. The contribution of PW, likely through interacting with background atmosphere and changing GW filtering by the stratospheric wind, is further described, and the contribution of the adiabatic vertical motion of the air parcel mainly forced by the superposition of tide and GW is also discussed. Both factors can cause warming in the upper mesosphere and affect the chemical balance of Na.

Thank you again for taking the time to review our manuscript.