Consistency evaluation of tropospheric ozone from ozonesonde and IAGOS aircraft observations: vertical distribution, ozonesonde types and station-airport distance

Honglei Wang[1, 2], David W. Tarasick[3*], Jane Liu[2*], Herman G.J. Smit[4], Roeland Van Malderen[5], Lijuan Shen[6], Tianliang Zhao[1]

[1] China Meteorological Administration Aerosol-Cloud and Precipitation Key Laboratory, Nanjing University of Information Science and Technology, Nanjing 210044, China;

[2] Department of Geography and Planning, University of Toronto, Canada;

[3] Environment and Climate Change Canada, 4905 Dufferin Street, Downsview, ON, M3H 5T4 Canada;

[4] Institute for Energy and Climate Research: Troposphere (IEK-8), Research Centre Juelich (FZJ), Juelich, Germany;

[5] Royal Meteorological Institute of Belgium, Brussels, Belgium;

[6] School of Atmosphere and Remote Sensing, Wuxi University, Wuxi 214105, China;

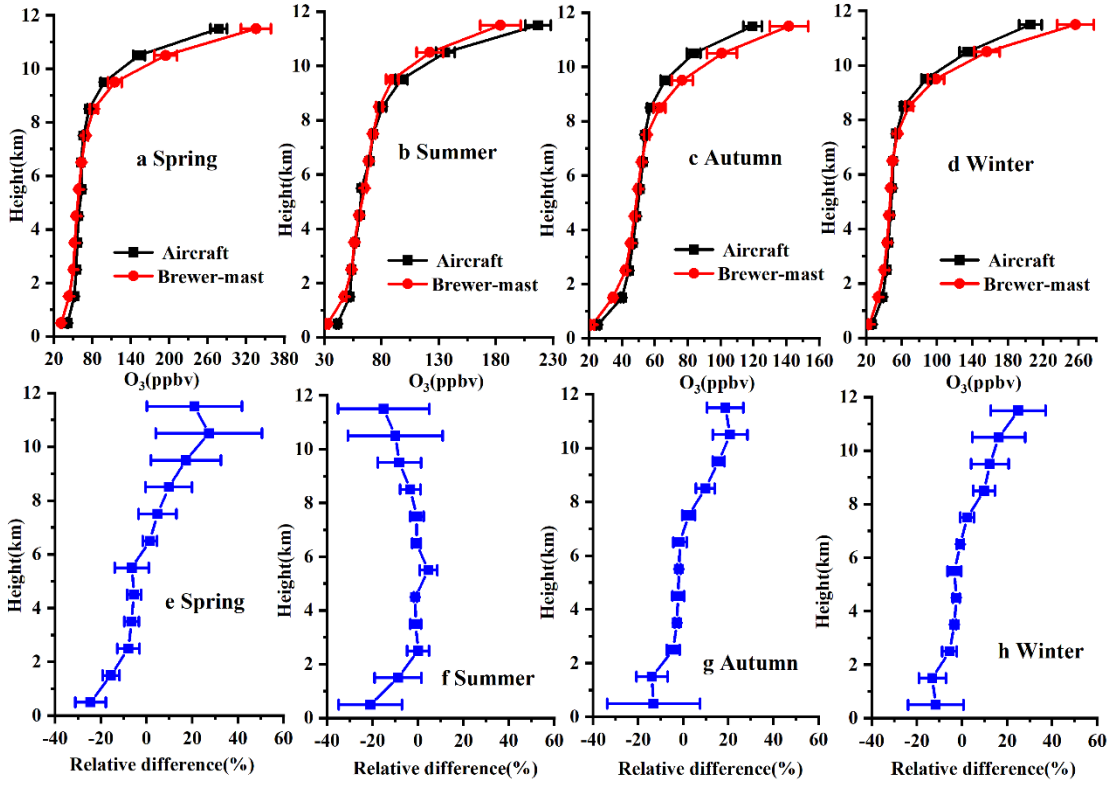

Figure S1. Comparison of vertical profiles of tropospheric O_3 (a-d) and the mean relative difference (e-h) between Brewer-mast ozonesonde and aircraft observations in four seasons. Note that the horizontal scales of the plots among (a)-(d), and among (e) -(h) are not the same.

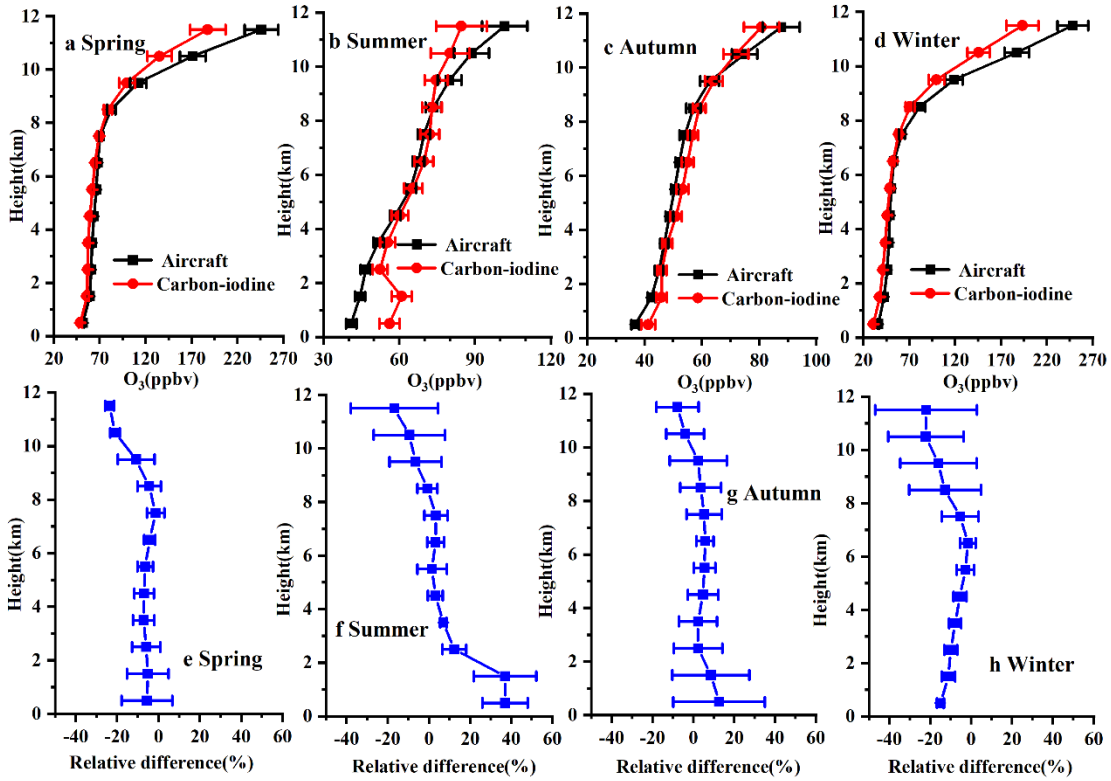

Figure S2. The same as Figure S1, but between Carbon-iodine ozonesonde and aircraft observations.

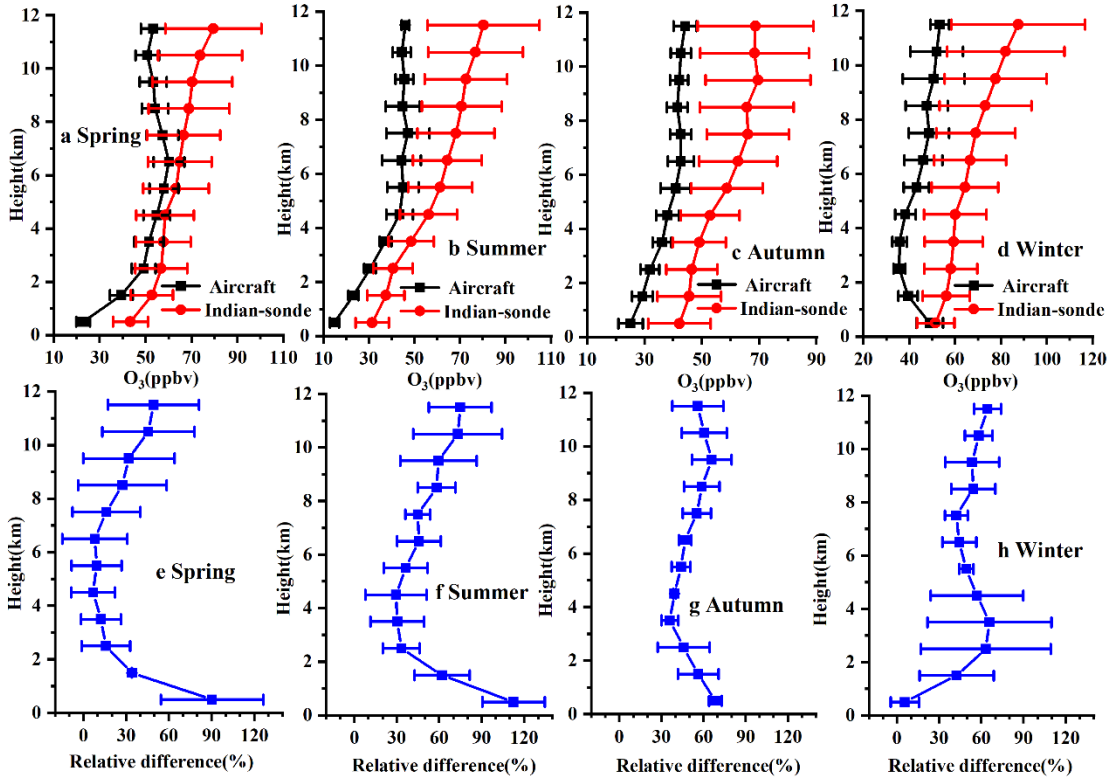

Figure S3. The same as Figure S1, but between Indian-sonde and aircraft observations.

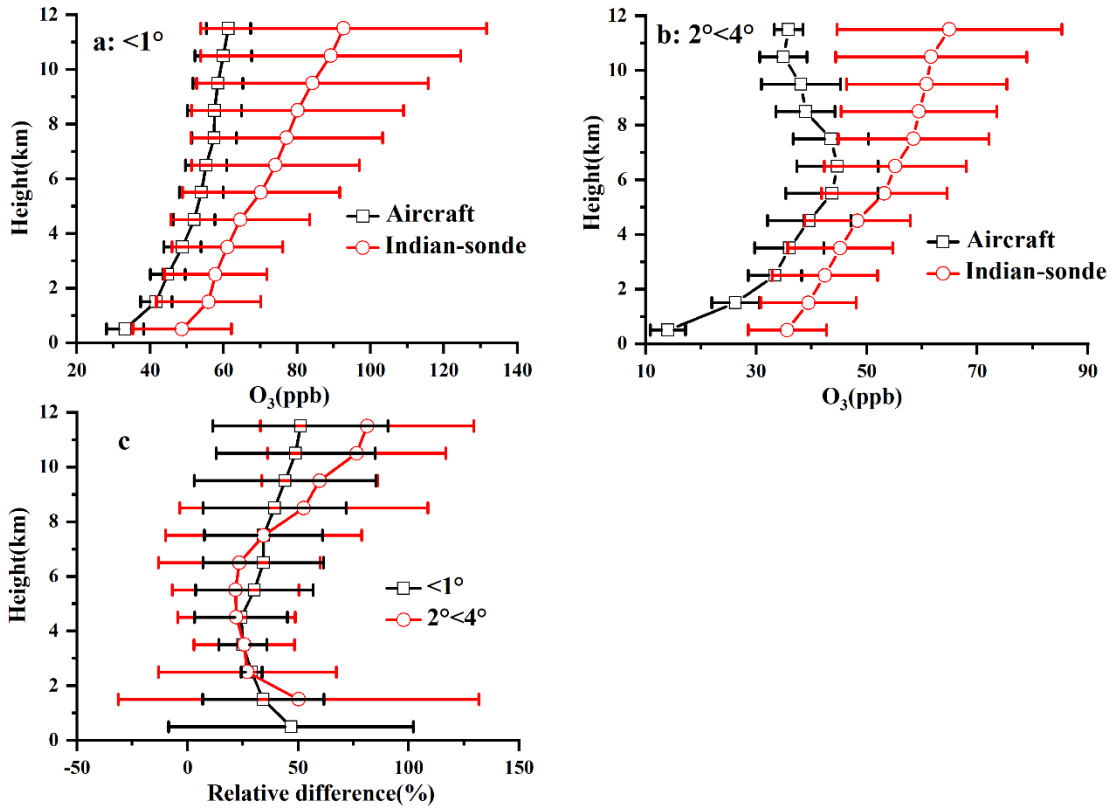

Figure S4. Vertical profiles of tropospheric O_3 (a and b) and the mean relative difference between Indian-sonde and aircraft observations at different station-pair distances (c).

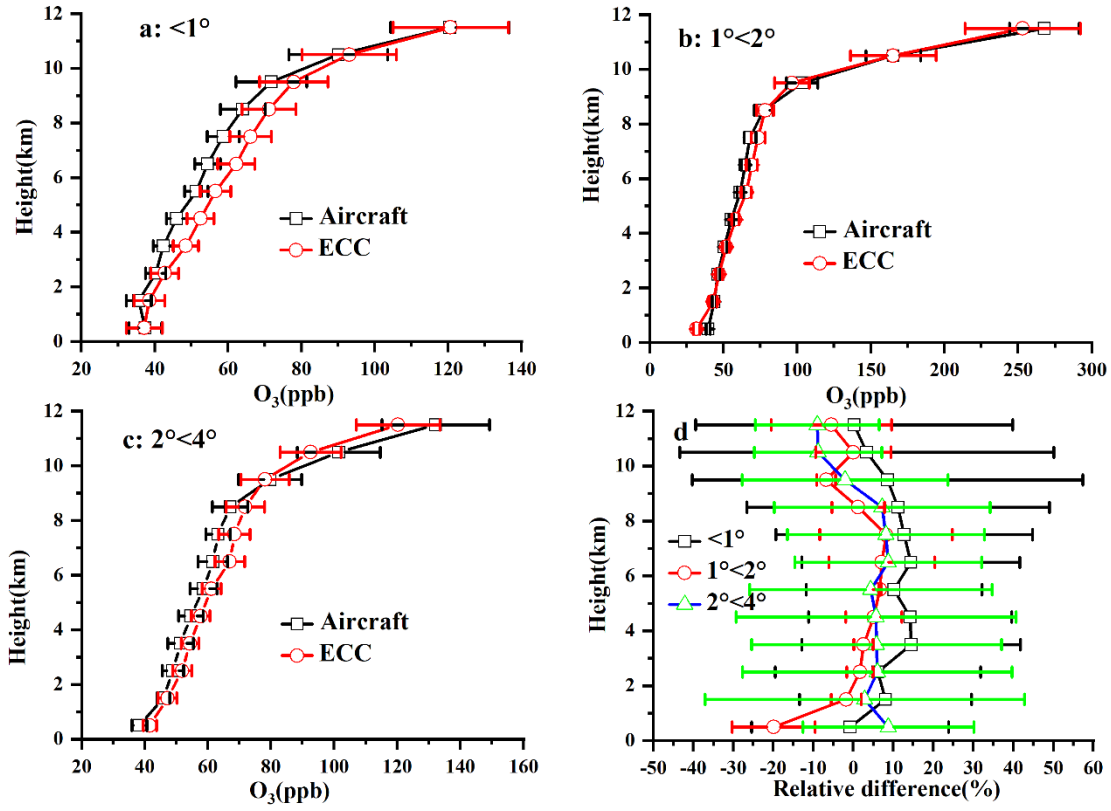

Figure S5. Vertical profiles of tropospheric O_3 (a-c) and the mean relative difference between ECC

ozonesonde and aircraft observations at different station-pair distances in summer (d).

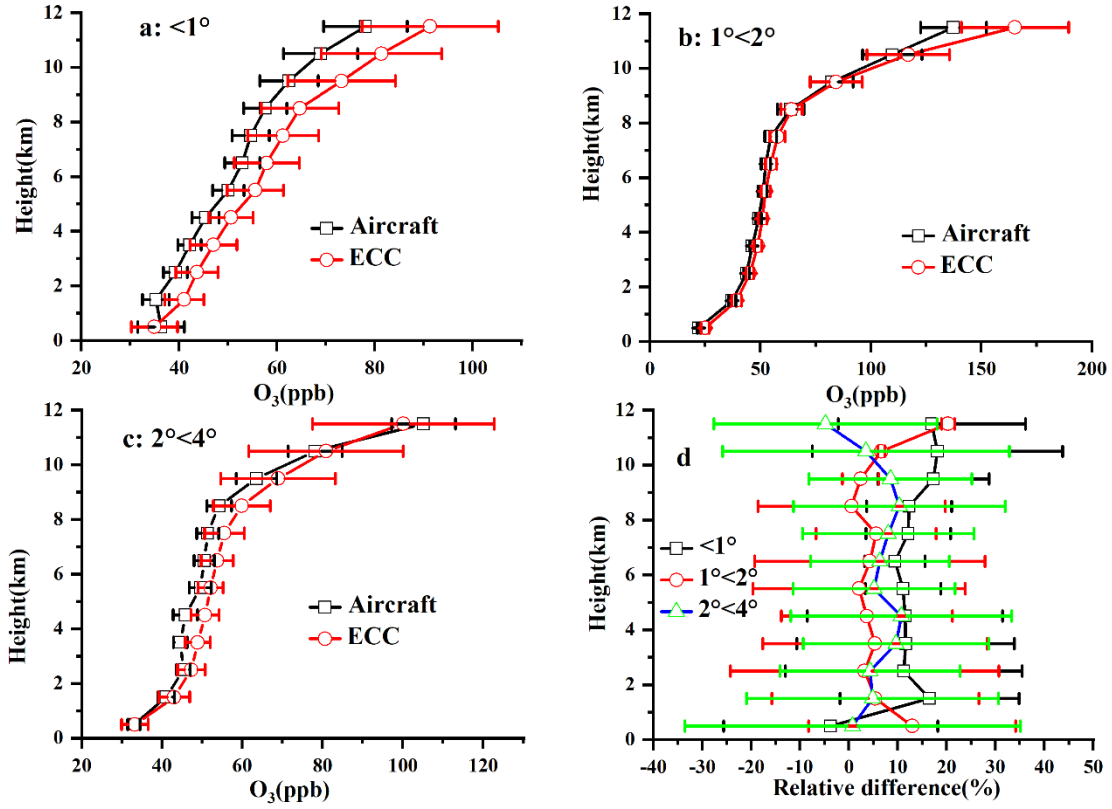

Figure S6. Vertical profiles of tropospheric O_3 (a-c) and the mean relative difference between ECC ozonesonde and aircraft observations at different station-pair distances in autumn (d).

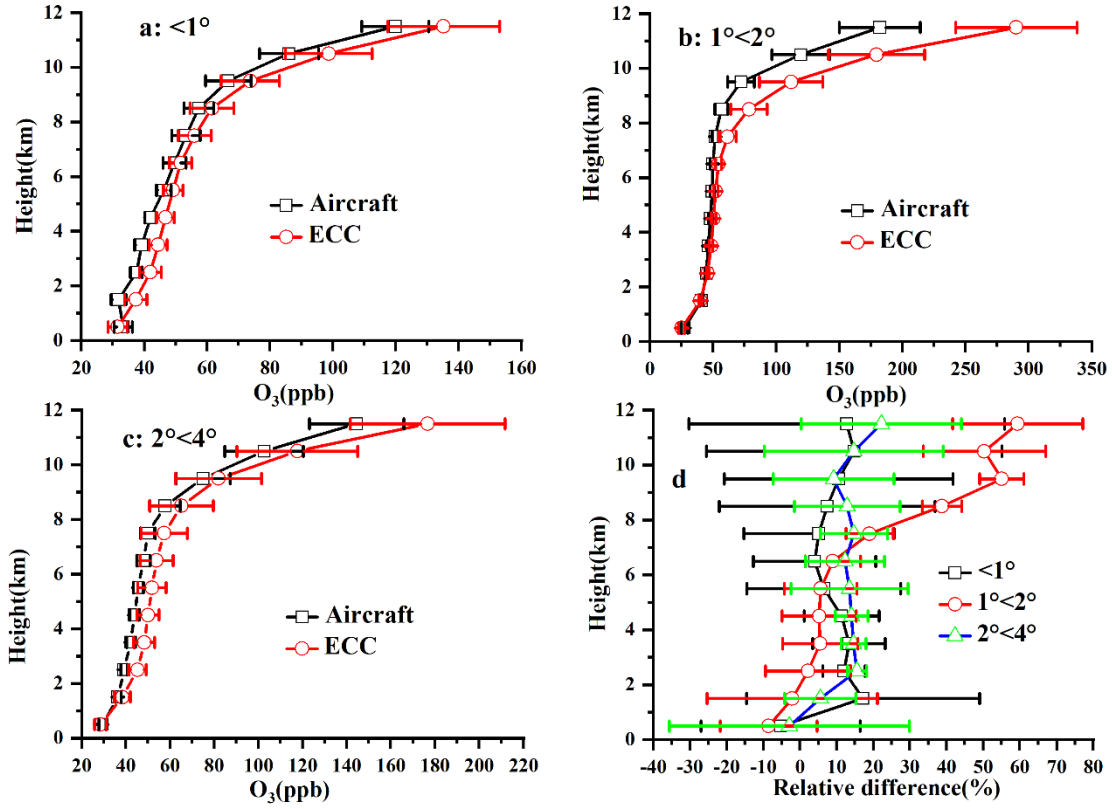

Figure S7. Vertical profiles of tropospheric O_3 (a-c) and mean relative difference between ECC ozonesonde and aircraft observations at different station-pair distances in winter (d).

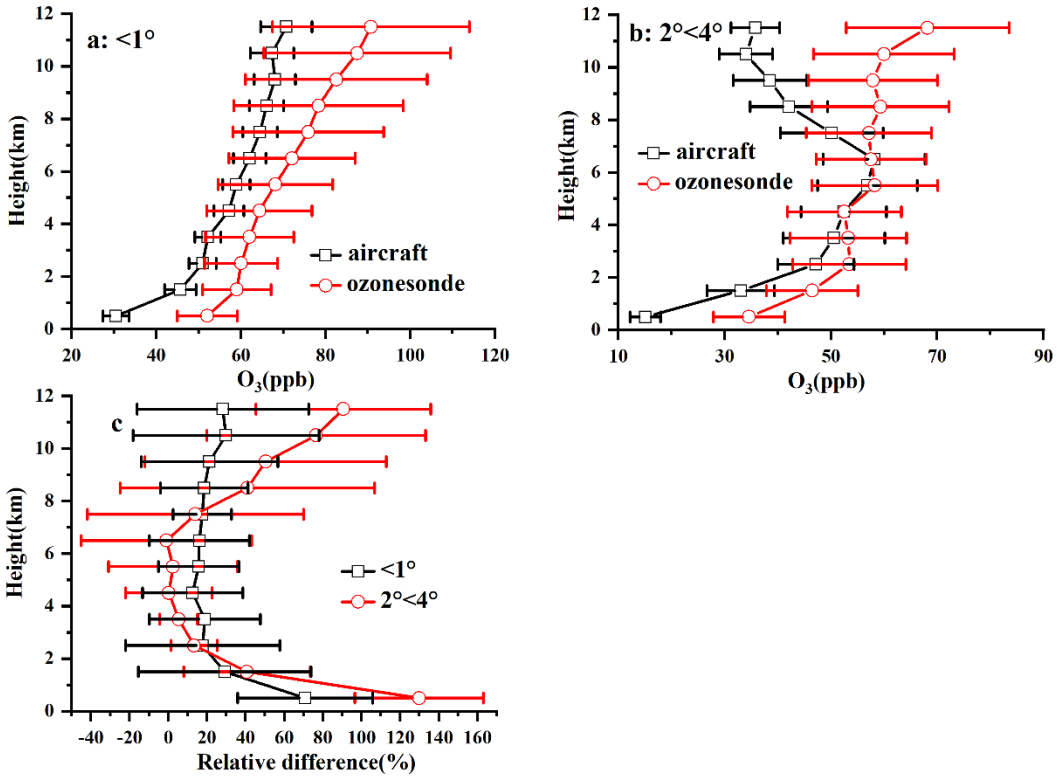

Figure S8. Vertical profiles of tropospheric O_3 (a and b) and mean relative difference between Indian-sonde ozonesonde and aircraft observations at different station-pair distances in spring (c).