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Determination and climatology of the diurnal cycle of the atmospheric mixing layer height over Beijing 2013–2018: lidar measurements and implications for air pollution

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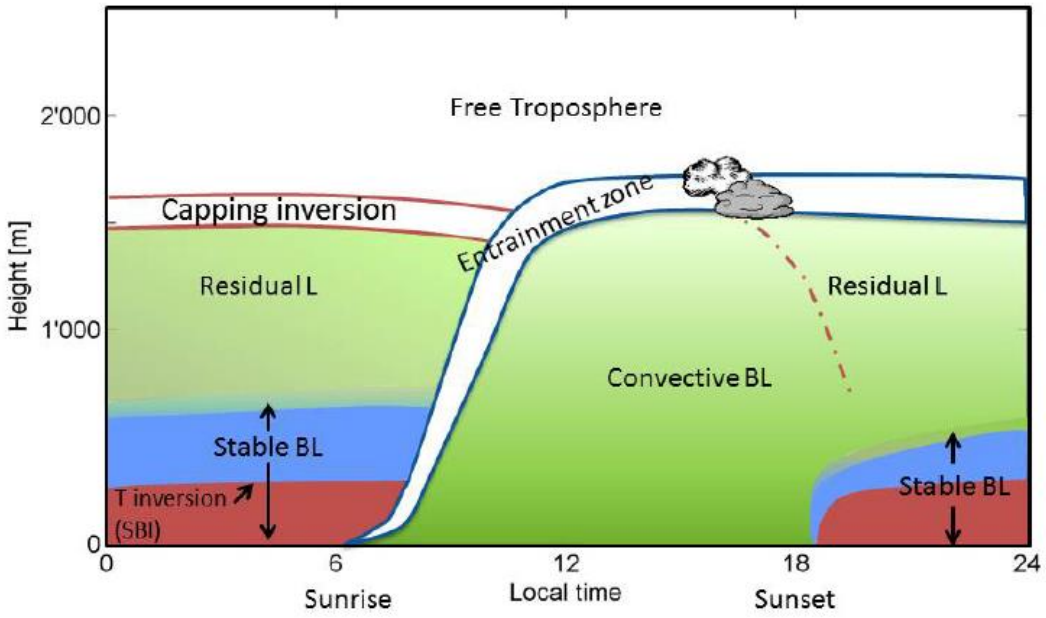

Fig.S1. Diurnal cycle of the PBL height over land for a clear convective day (adapted from Collaud et al., 2014).

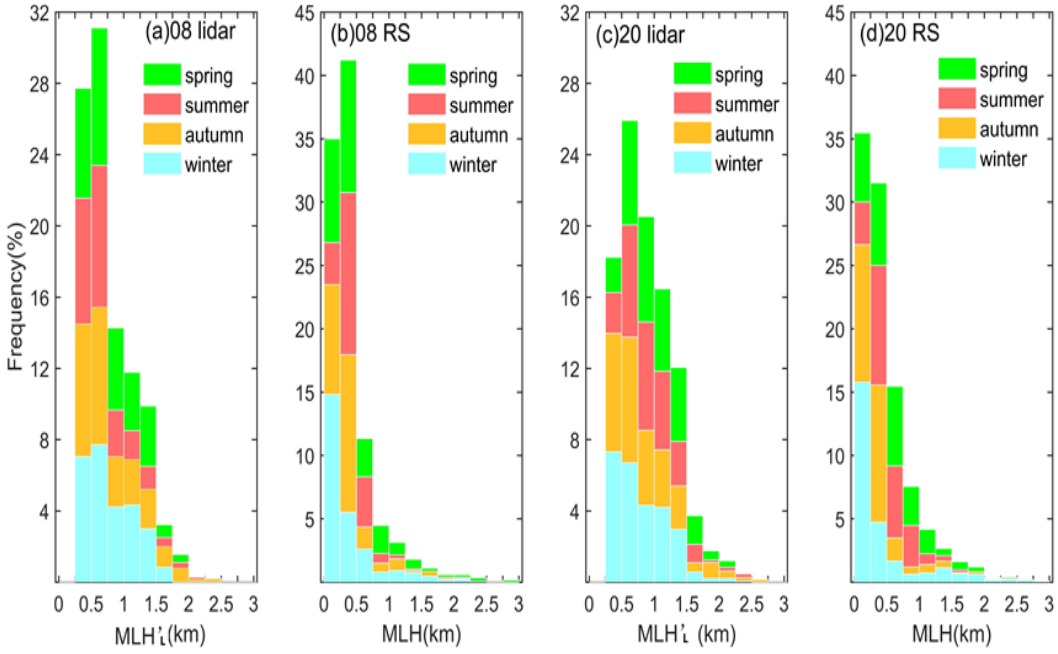

Fig. S2. Comparison of frequency distribution of all MLH_L' retrieved from lidar and MLH_{RS} from radiosonde with the supplementary information of seasonal variation (2013-2018). MLH from (a) lidar and (b) radiosonde at time of 08 (LST), (c) lidar and (d) radiosonde at time of 20 (LST) are presented. Noted that for presenting the detail distribution, MLH_L' add up to 20%, while MLH_{RS} add up to 45%.

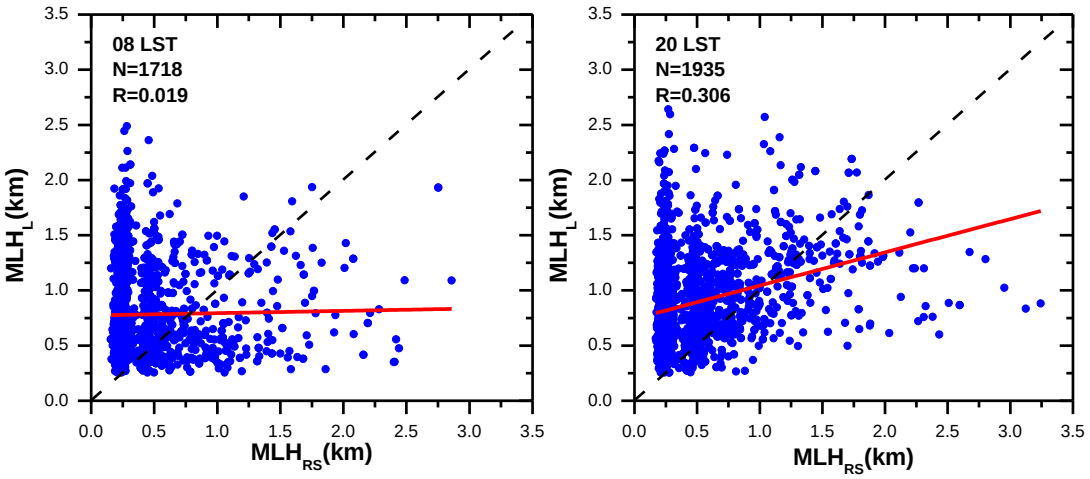

Fig.S3. Comparisons between MLH_L derived from lidar and MLH_{RS} from radiosonde at time of 08 and 20 (LST). Red line indicates the linear fitting, while the black dash line represents the 1:1 line.

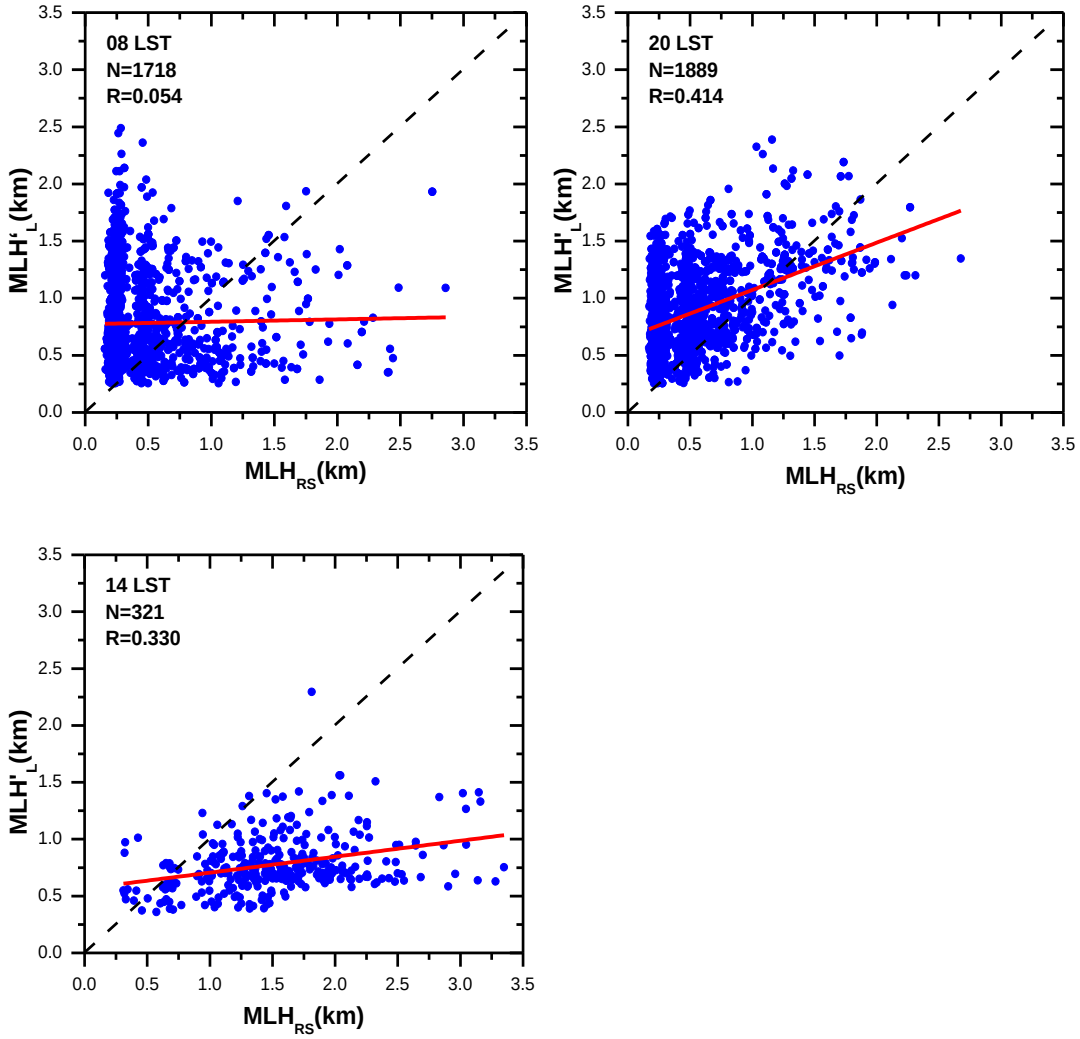

Fig.S4. Comparisons between MLH'_L derived from lidar and MLH_{RS} from radiosonde at time of 08, 14 and 20 (LST). Red line indicates the linear fitting, while the black dash line represents the 1:1 line.

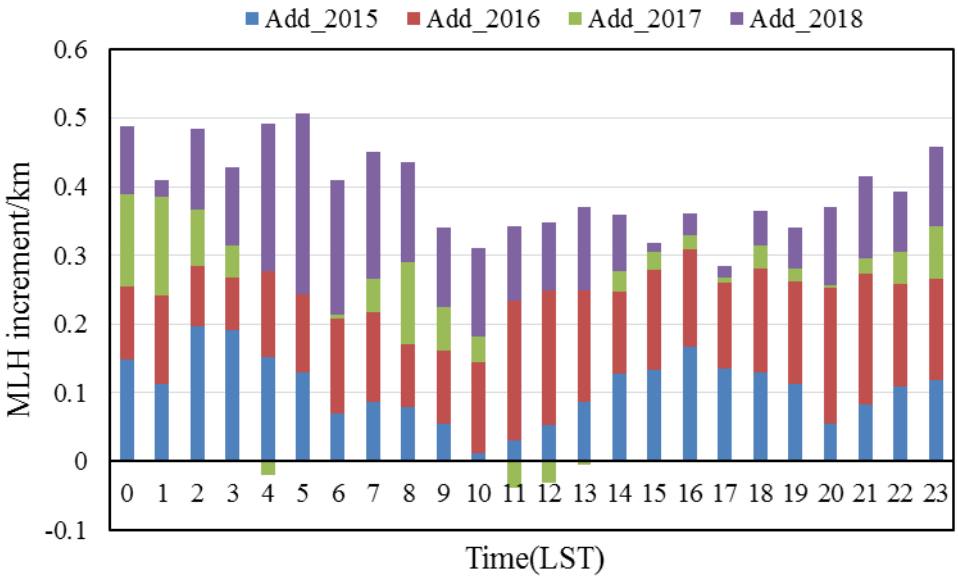

Fig.S5. Inter-annual changes of the increment of MLH_L obtained by lidar throughout the day.