Supplement of

Enhancing dust aerosols monitoring capabilities across North Africa and the Middle East using the A-Train satellite constellation

Anna Moustaka et al.

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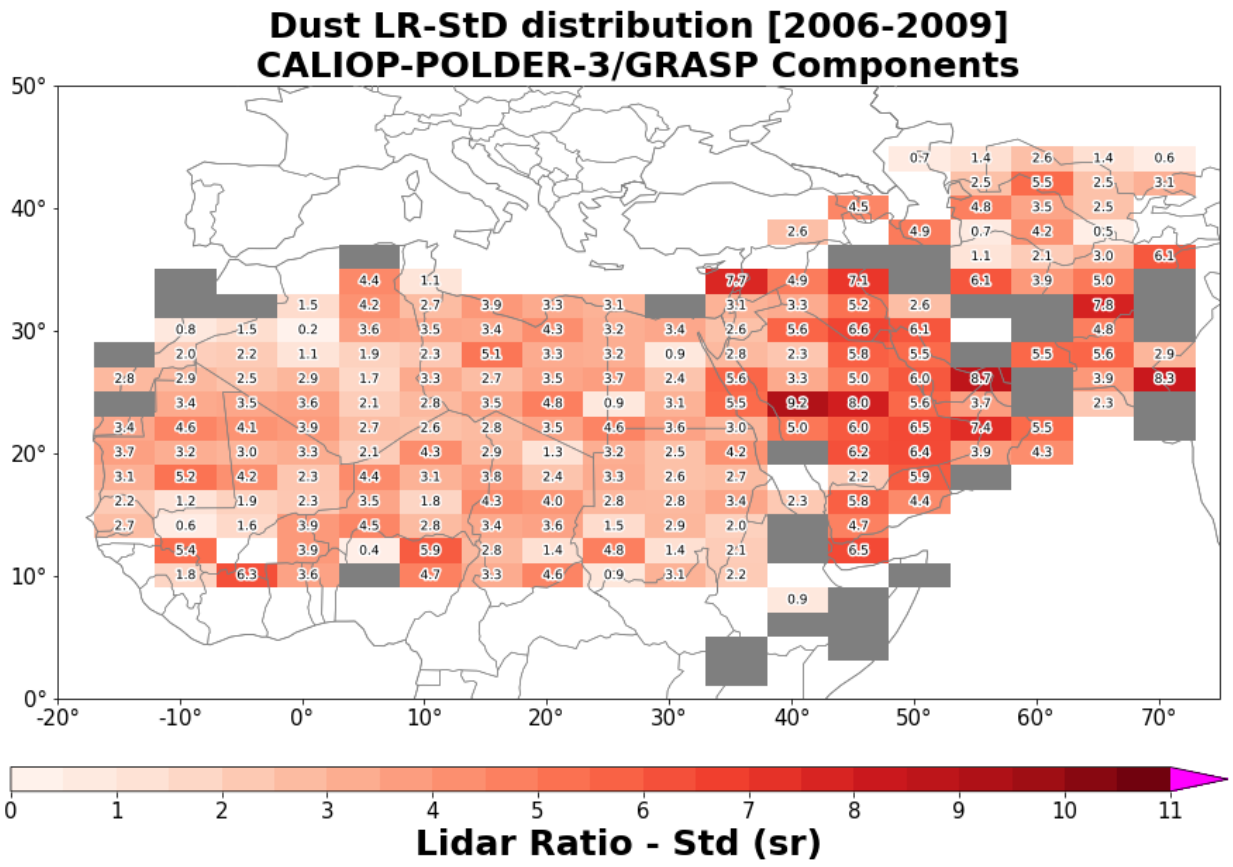

Figure S1: The spatial variability of dust LR standard deviation based on the synergy of CALIOP and POLDER-3/GRASP. The values represent the standard deviation of LR per 2ºx5º predefined grid.

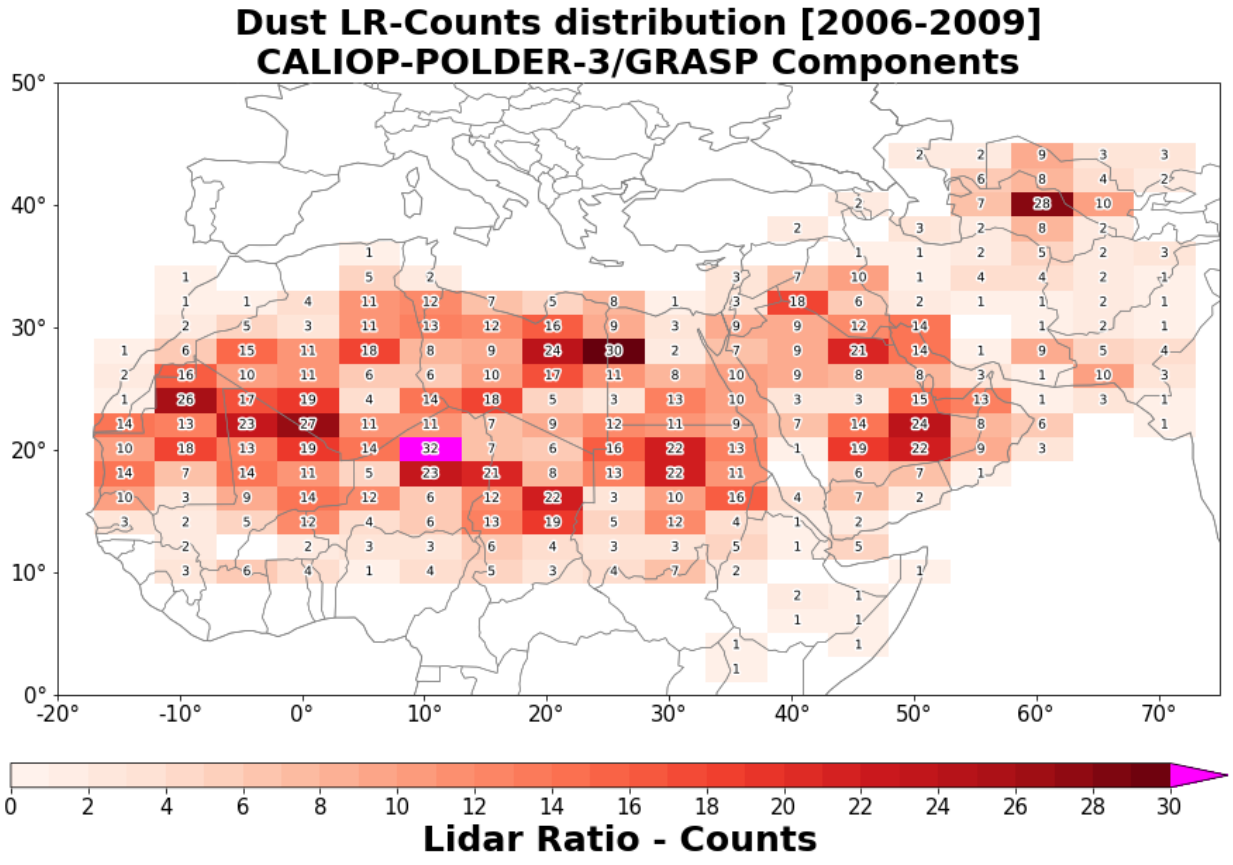

Figure S2: The spatial variability of dust LR counts based on the synergy of CALIOP and POLDER-3/GRASP. The values represent the number of dust cases used to derive the LR per 2ºx5º predefined grid.

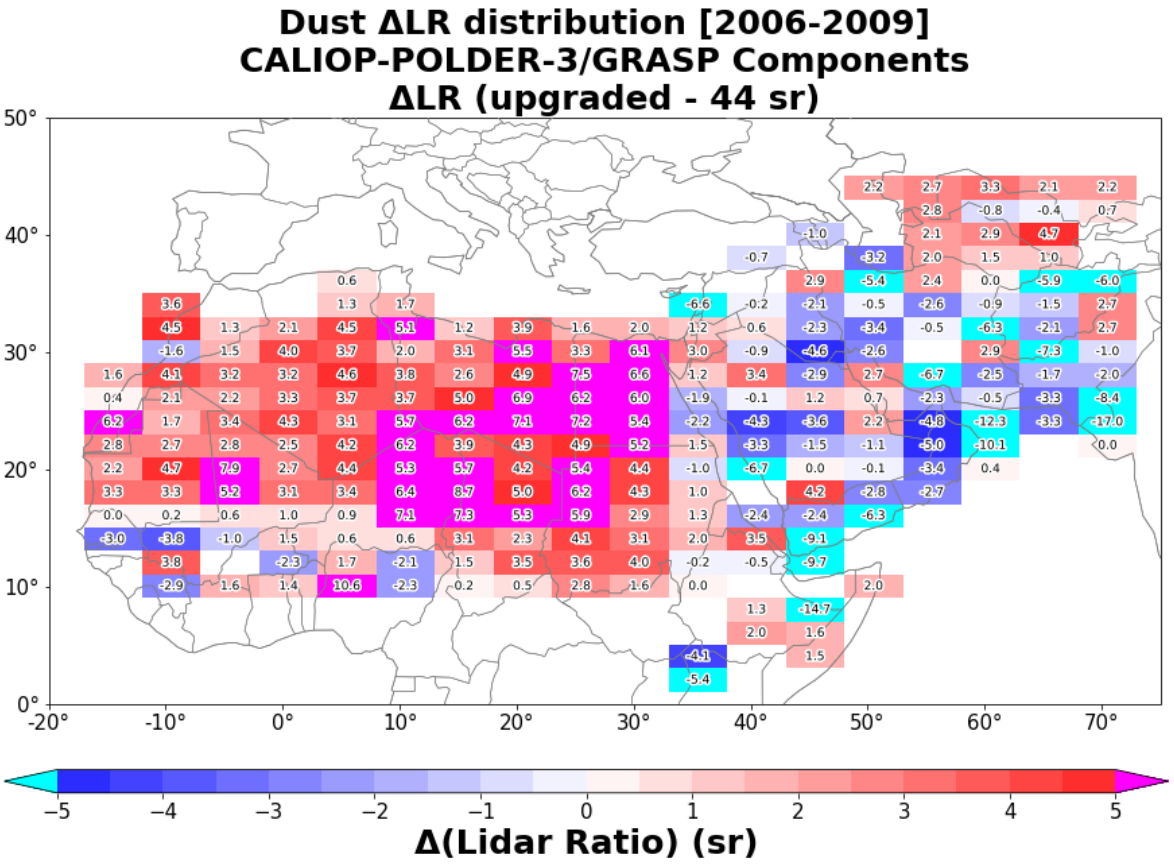

Figure S3: Geographical distribution of the differences between the upgraded dust LR (obtained via the CALIOP-POLDER-3/GRASP synergy) and the default value (44 sr) assigned to dust aerosols in the CALIPSO retrieval algorithm. The LR departures are computed per 2°x5° predefined grid.

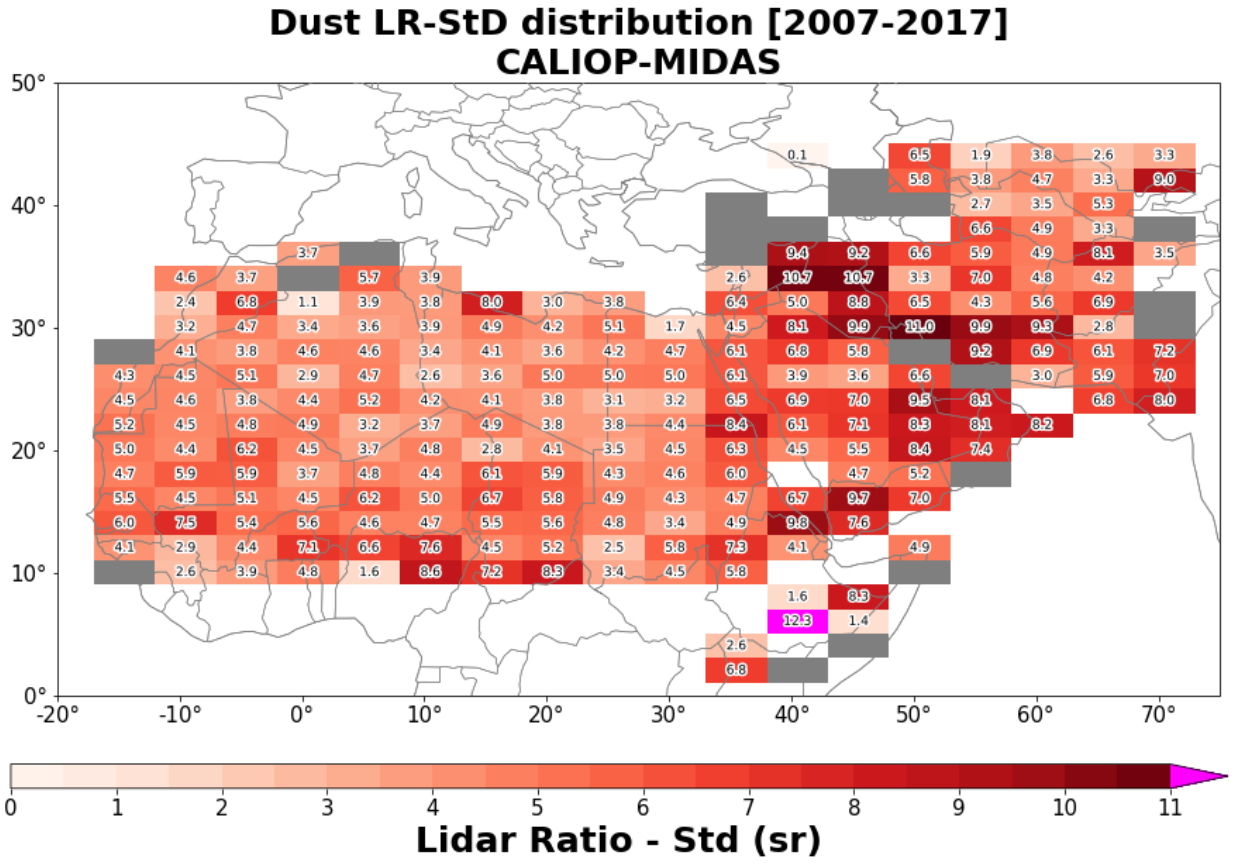

Figure S4: The spatial variability of dust LR standard deviation based on the synergy of CALIOP and MIDAS. The values represent the standard deviation of LR per 2°x5° predefined grid.

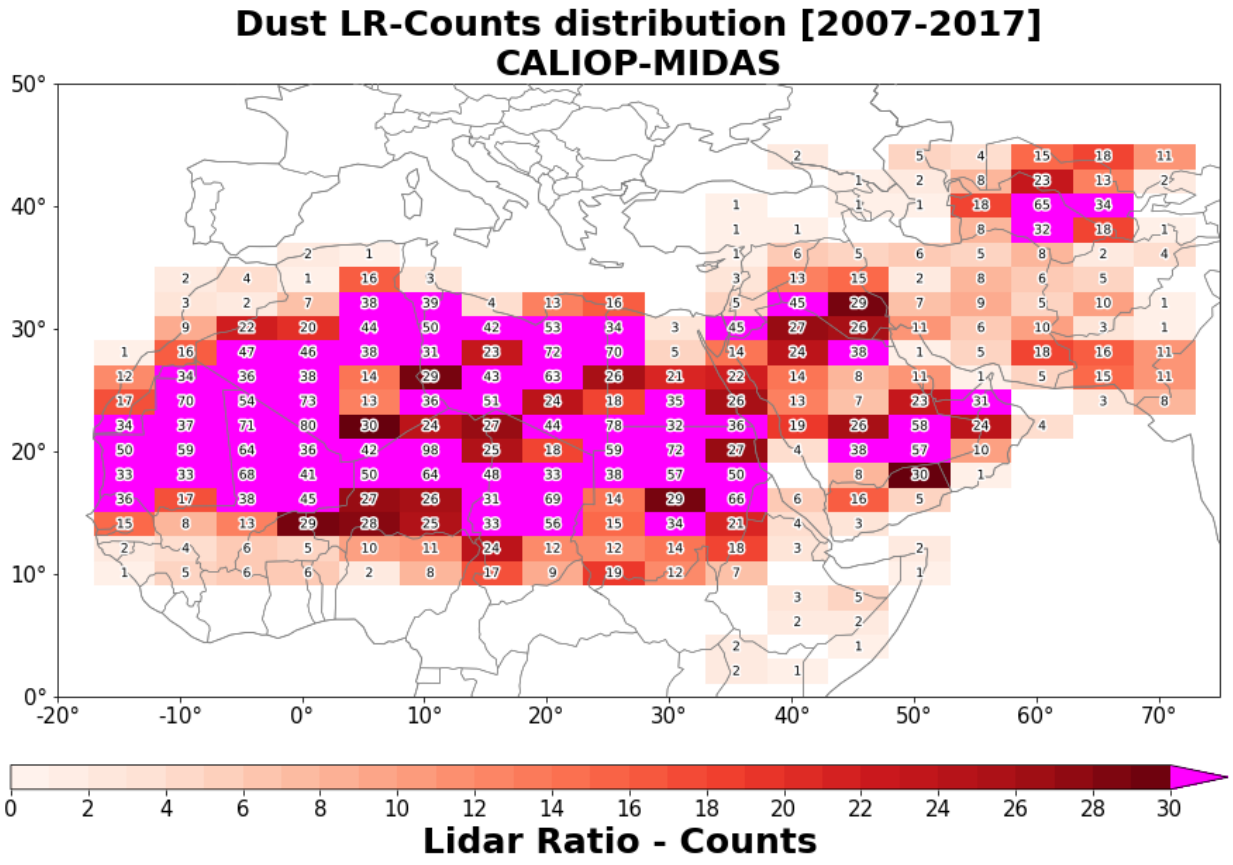

Figure S5: The spatial variability of dust LR counts based on the synergy of CALIOP and MIDAS. The values represent the number of dust cases used to derive the LR per 2°x5° predefined grid.

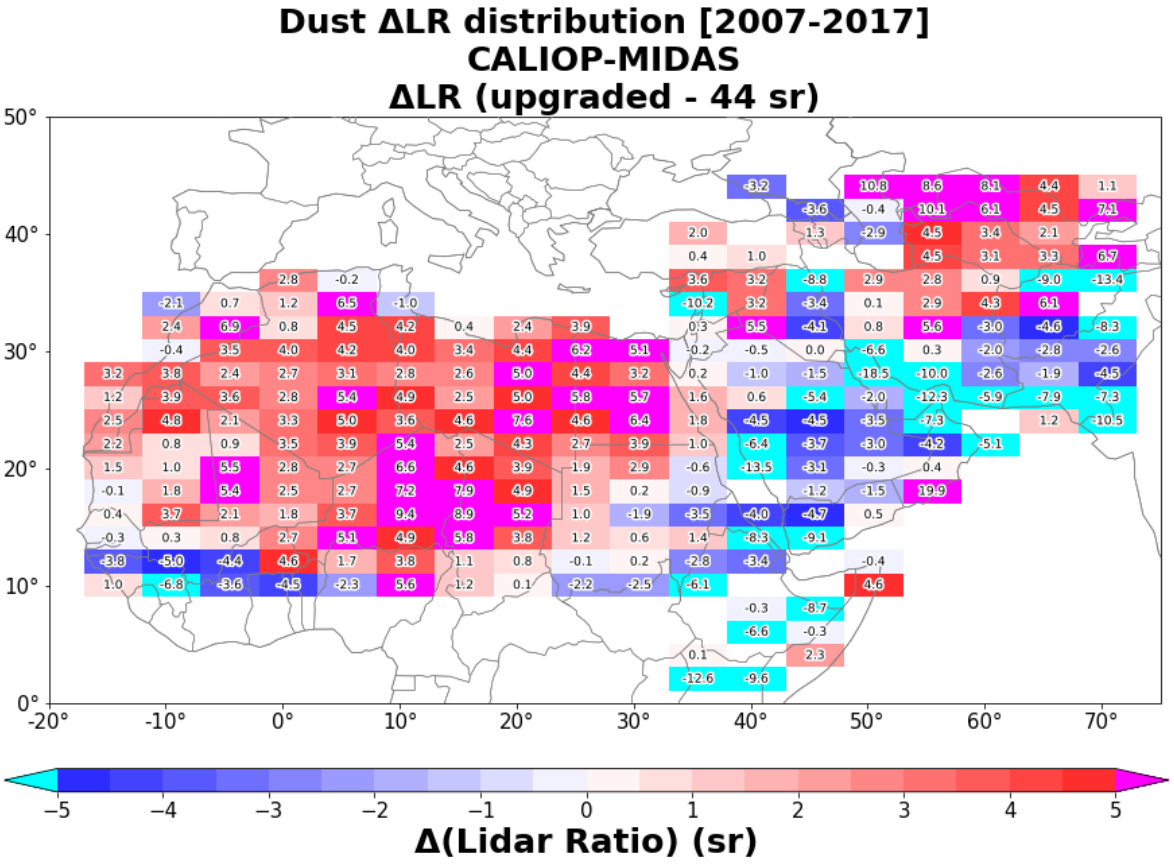

Figure S6: Geographical distribution of the differences between the upgraded dust LR (obtained via the CALIOP-MIDAS synergy) and the default value (44 sr) assigned to dust aerosols in the CALIPSO retrieval algorithm. The LR departures are computed per 2°x5° predefined grid.

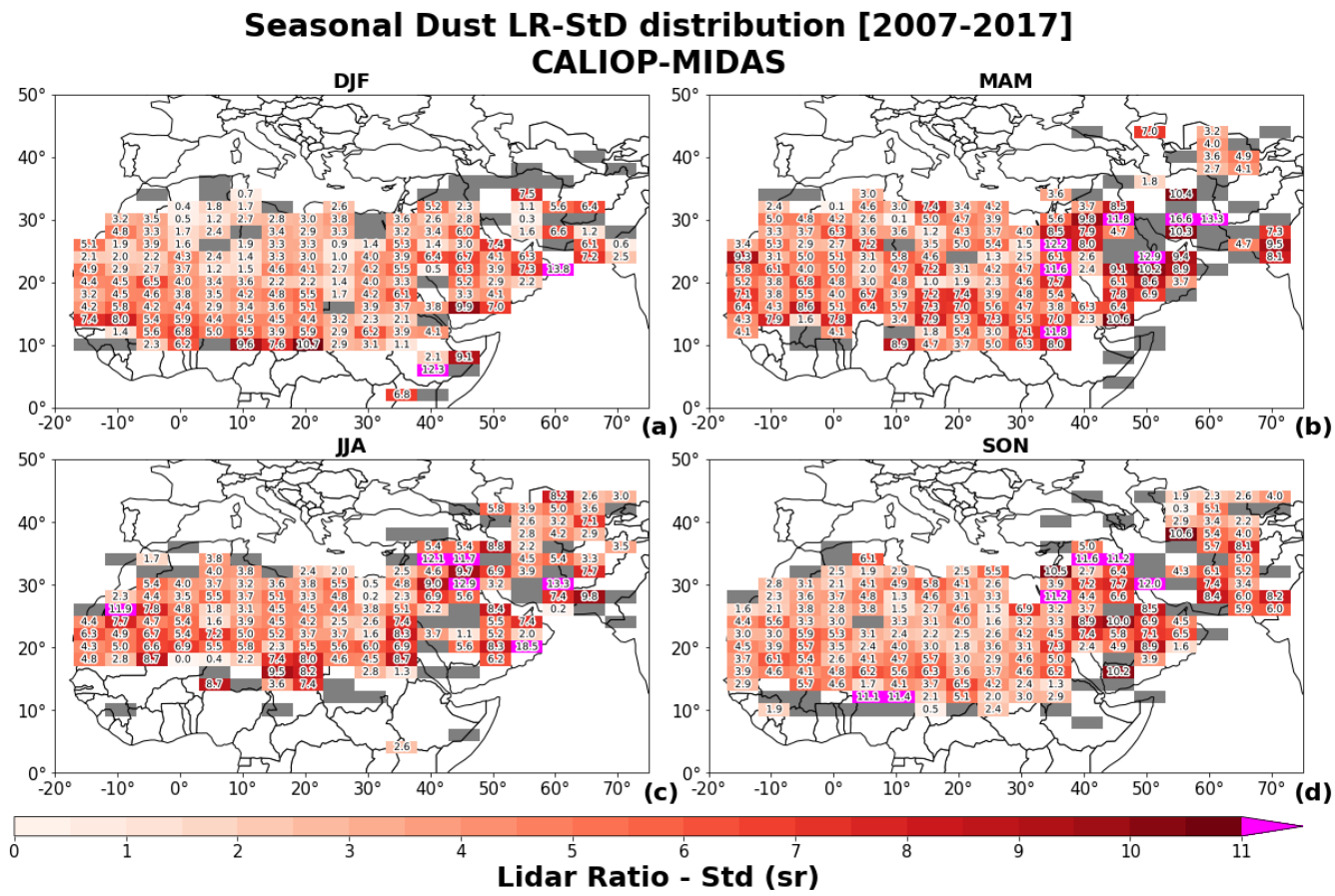

Figure S7: The seasonal distribution of dust LR standard deviation for (a) DJF, (b) MAM, (c) JJA and (d) SON based on the synergy of CALIOP and MIDAS. The values represent the standard deviation of LR per 2°x5° predefined grid.

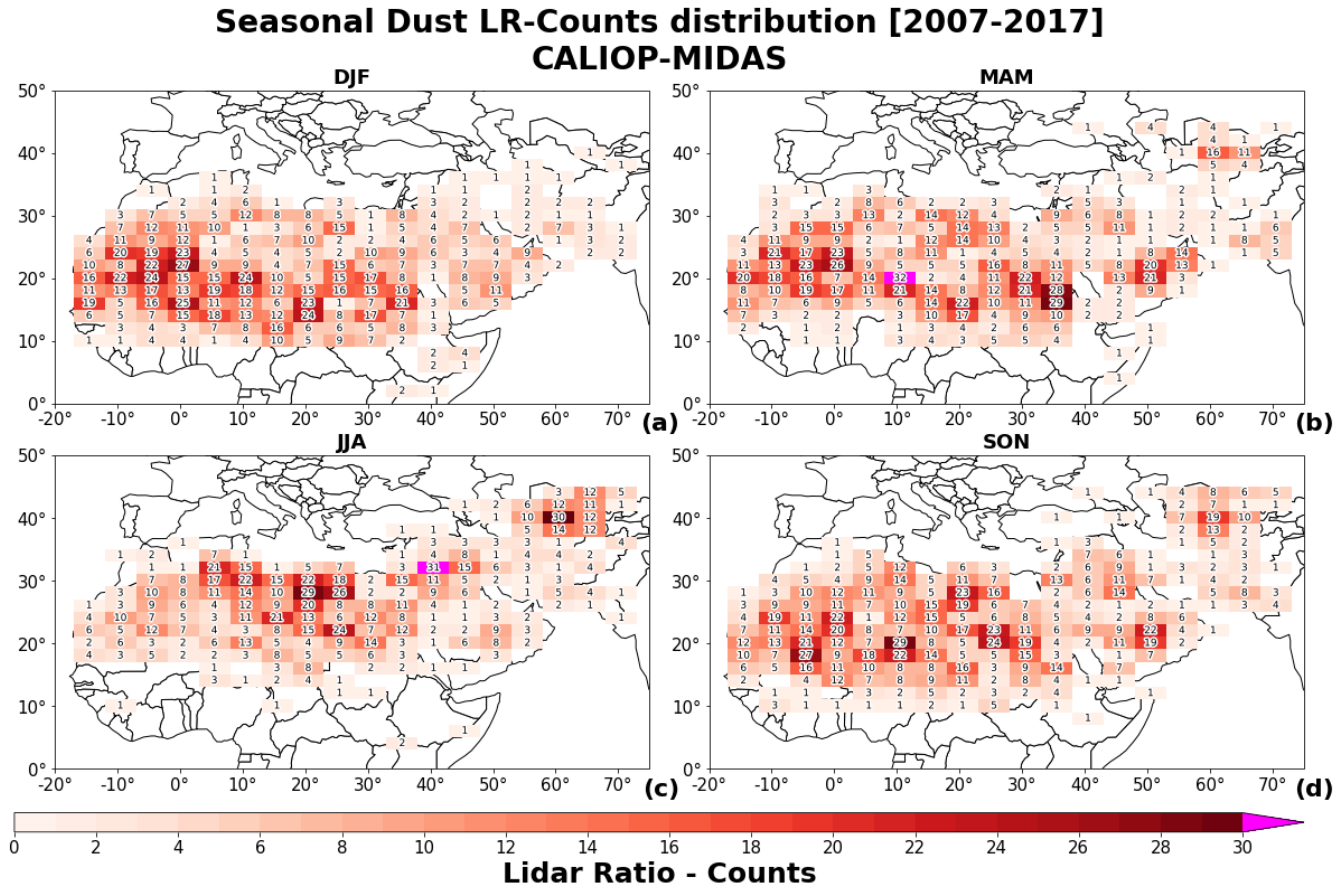

Figure S8: The seasonal distribution of dust LR counts for (a) DJF, (b) MAM, (c) JJA and (d) SON based on the synergy of CALIOP and MIDAS. The values represent the number of dust cases used to derive the LR per 2°x5° predefined grid.

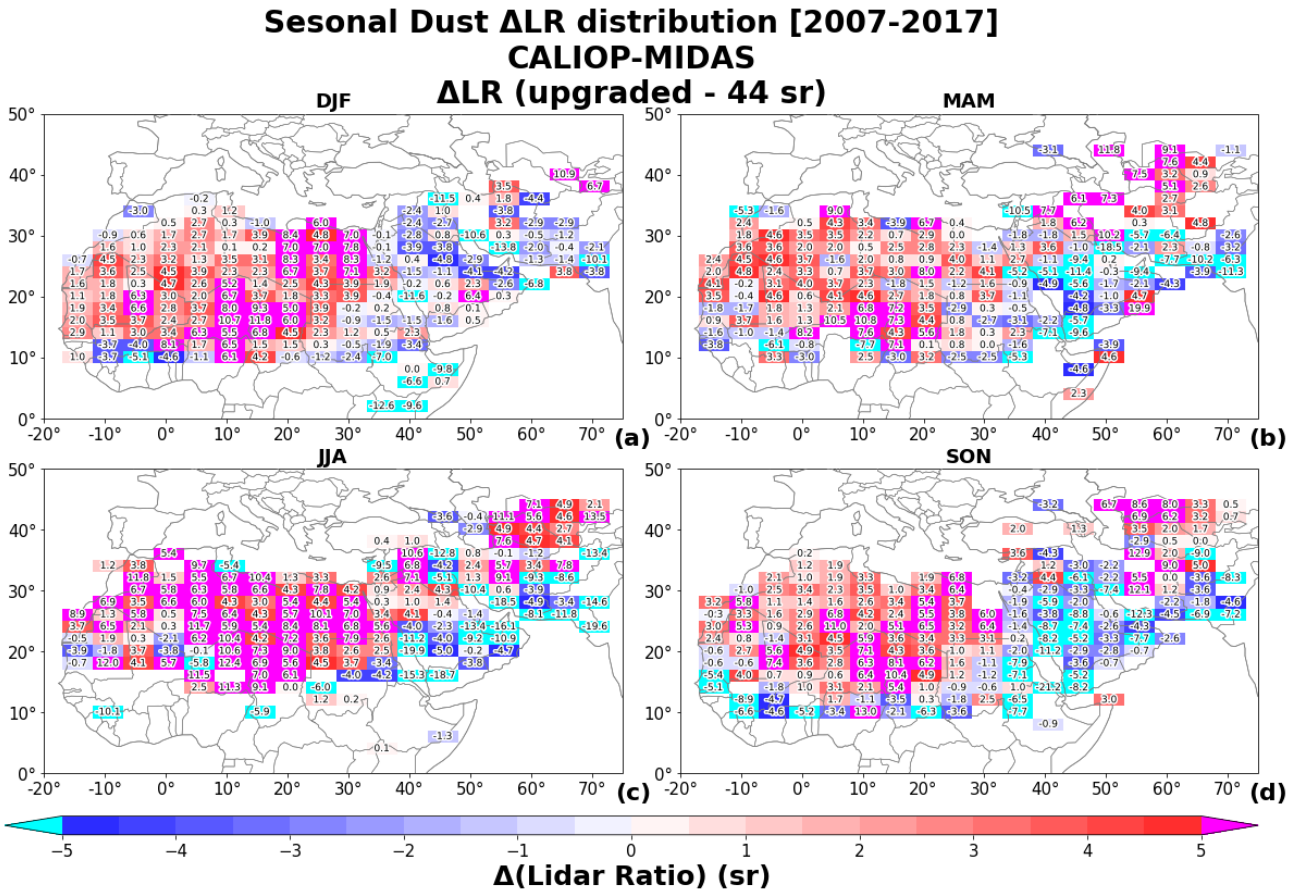

Figure S9: The seasonal geographical distribution of the differences for (a) DJF, (b) MAM, (c) JJA and (d) SON between the upgraded dust LR (obtained via CALIOP-MIDAS synergy) and the default value (44 sr) assigned to dust aerosols in the CALIPSO retrieval algorithm. The LR departures are computed per 2ºx5º predefined grid.