*TS1 Please note that all changes to values (in the text and in tables) have to be sent to the handling editor for approval. If you insist on inserting all numeric changes, please send a word document with an explanation why this is necessary, so I can forward it to the handling editor.*

Yes, those numbers need to be changed either due to typos or due to the need for maintaining the same decimal point of accuracy for consistency. Details are as follows:

Change:

Page 4, column 2, line 52: Please change “0.64” to “0.65”.

Rationale: Correct a typo. The correct number can also be find in Figure 1b.

Changes:

Page 4, column 2, line 69: “0.46” should be “0.47”

Page 4, column 2, line 71: “0.87” should be “0.86”

Page 4, column 2, line 75: “0.87” should be “0.86”

Rationale: Correct typos. We want to use the consistent numbers as shown in Levy et al., (2013) for wavelengths for MODIS.

Change

Page 5, column 1, line 10, “0.81 and 0.83” should be “0.83 and 0.81”

Rationale: Correct typos. Correct numbers can also be find in Figures 3c and 3b.

Change

Page 6, Table 1 caption: “MODIS Aqua AOD” should be “MODIS AOD”

Rationale: please remove “Aqua” as both Aqua and Terra data are included in the table. We requested this change last time but was not accepted.

Change

Page 6, Table 1, please change highlighted numbers

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| AERONET | 2240 | 0.56 | 0.65 | 0.088 | 0.054 | 0.98 | 0.001 | 0.103 | 0.099 | 0.058 | 1.31 | 0 | 0.119 |
| MODIS Aqua | 3529 | 0.70 | 0.74 | 0.067 | 0.048 | 0.81 | 0 | 0.07 | 0.07 | 0.053 | 1.76 | 0.002 | 0.075 |
| MODIS Terra | 2334 | 0.74 | 0.72 | 0.076 | 0.056 | 0.9 | 0.001 | 0.081 | 0.084 | 0.065 | 1.13 | 0.006 | 0.079 |
| CALIOP | 2762 | 0.73 | 0.74 | 0.089 | 0.063 | 1.01 | 0 | 0.102 | 0.092 | 0.065 | 1.1 | 0.002 | 0.1 |

Rationale: Blue numbers indicate corrected typos. The correct number can be found in Figure 3a. Red numbers have been rounded to the third decimal place. For example, we changed “0.0018” to “0.002”

Change Table 2

|  |  |  |  |
| --- | --- | --- | --- |
| **Collocation Thresholds** | **AERONET/CATS** | **AERONET** | **CATS** |
| *Spatial (30 min.)*  |  |  |  |  |  |  |  |  |  |  |  |
|   | **No. of Points** | **Slope** | **R-value** | **Mean AOD** | **Median AOD** | **Max AOD** | **Min AOD** | **STDDEV** | **Mean AOD** | **Median AOD** | **Max AOD** | **Min AOD** | **STDDEV** |
| 0.2° | 904 | 0.54 | 0.63 | 0.092 | 0.052 | 0.82 | 0.002 | 0.107 | 0.102 | 0.058 | 1.31 | 0 | 0.124 |
| 0.4° | 2240 | 0.56 | 0.65 | 0.088 | 0.054 | 0.98 | 0.001 | 0.103 | 0.099 | 0.058 | 1.31 | 0 | 0.119 |
| 0.8° | 5114 | 0.53 | 0.63 | 0.087 | 0.052 | 0.98 | 0.001 | 0.105 | 0.097 | 0.055 | 2 | 0 | 0.125 |
| *Temporal (0.4° lat./lon.)* |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | **No. of Points** | **Slope** | **R-value** | **Mean AOD** | **Median AOD** | **Max AOD** | **Min AOD** | **STDDEV** | **Mean AOD** | **Median AOD** | **Max AOD** | **Min AOD** | **STDDEV** |
| 15 minutes | 1931 | 0.54 | 0.63 | 0.089 | 0.053 | 0.98 | 0.001 | 0.105 | 0.1 | 0.057 | 1.34 | 0 | 0.123 |
| 30 minutes | 2240 | 0.56 | 0.65 | 0.088 | 0.054 | 0.98 | 0.001 | 0.103 | 0.099 | 0.058 | 1.31 | 0 | 0.119 |
| 60 minutes | 2695 | 0.55 | 0.64 | 0.087 | 0.053 | 0.98 | 0.001 | 0.103 | 0.098 | 0.057 | 1.32 | 0 | 0.118 |
|   |  |  |   |  |  |  |  |   |  |  |  |  |  |
| **Collocation Thresholds** | **CALIOP/CATS** | **CALIOP** | **CATS** |
| *Spatial (30 min.)*  |  |  |  |  |  |  |  |  |  |  |  |
|   | **No. of Points** | **Slope** | **R-value** | **Mean AOD** | **Median AOD** | **Max AOD** | **Min AOD** | **STDDEV** | **Mean AOD** | **Median AOD** | **Max AOD** | **Min AOD** | **STDDEV** |
| 0.2° | 1948 | 0.73 | 0.76 | 0.088 | 0.063 | 1.15 | 0 | 0.104 | 0.092 | 0.065 | 1.12 | 0.001 | 0.1 |
| 0.4° | 2762 | 0.73 | 0.74 | 0.089 | 0.063 | 1.01 | 0 | 0.102 | 0.092 | 0.065 | 1.1 | 0.002 | 0.1 |
| 0.8° | 5070 | 0.80 | 0.74 | 0.089 | 0.063 | 0.94 | 0 | 0.099 | 0.093 | 0.066 | 1.61 | 0.001 | 0.107 |
| *Temporal (0.4° lat./lon.)* |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | **No. of Points** | **Slope** | **R-value** | **Mean AOD** | **Median AOD** | **Max AOD** | **Min AOD** | **STDDEV** | **Mean AOD** | **Median AOD** | **Max AOD** | **Min AOD** | **STDDEV** |
| 15 minutes | 1392 | 0.76 | 0.77 | 0.09 | 0.063 | 0.95 | 0 | 0.104 | 0.092 | 0.066 | 1.1 | 0.002 | 0.102 |
| 30 minutes | 2762 | 0.73 | 0.74 | 0.089 | 0.063 | 1.01 | 0 | 0.102 | 0.092 | 0.065 | 1.1 | 0.002 | 0.1 |
| 60 minutes | 5602 | 0.74 | 0.75 | 0.09 | 0.063 | 1.4 | 0 | 0.104 | 0.093 | 0.066 | 1.55 | 0.001 | 0.103 |
|   |  |  |   |  |  |  |  |   |  |  |  |  |  |
| **Collocation Thresholds** | **MODIS Aqua/CATS** | **MODIS Aqua** | **CATS** |
| *Spatial (30 min.)*  |  |  |  |  |  |  |  |  |  |  |  |
|   | **No. of Points** | **Slope** | **R-value** | **Mean AOD** | **Median AOD** | **Max AOD** | **Min AOD** | **STDDEV** | **Mean AOD** | **Median AOD** | **Max AOD** | **Min AOD** | **STDDEV** |
| 0.2° | 2998 | 0.73 | 0.75 | 0.062 | 0.043 | 0.86 | 0 | 0.073 | 0.07 | 0.052 | 1.74 | 0.003 | 0.075 |
| 0.4° | 3529 | 0.70 | 0.74 | 0.067 | 0.048 | 0.81 | 0 | 0.07 | 0.07 | 0.053 | 1.76 | 0.002 | 0.075 |
| 0.8° | 4107 | 0.67 | 0.74 | 0.07 | 0.053 | 0.79 | 0 | 0.066 | 0.071 | 0.053 | 1.71 | 0.003 | 0.073 |
| *Temporal (0.4° lat./lon.)* |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | **No. of Points** | **Slope** | **R-value** | **Mean AOD** | **Median AOD** | **Max AOD** | **Min AOD** | **STDDEV** | **Mean AOD** | **Median AOD** | **Max AOD** | **Min AOD** | **STDDEV** |
| 15 minutes | 1814 | 0.61 | 0.71 | 0.064 | 0.048 | 0.82 | 0 | 0.067 | 0.069 | 0.052 | 1.76 | 0.003 | 0.078 |
| 30 minutes | 3529 | 0.70 | 0.74 | 0.067 | 0.048 | 0.81 | 0 | 0.07 | 0.07 | 0.053 | 1.76 | 0.002 | 0.075 |
| 60 minutes | 6490 | 0.78 | 0.76 | 0.069 | 0.049 | 1.21 | 0 | 0.076 | 0.072 | 0.054 | 1.76 | 0.003 | 0.074 |

Rationale: Same explanations as the previous change. Blue numbers indicate corrected typos. Red numbers have been rounded to the third decimal place.

Change

Page 9, column 2, line 8: “19 %” should be “18.2 %”

Rationale: This number refers to a number mentioned by Pauly et al. (2019). This change is made to be more consistent with the number mentioned in Pauly et al. (2019).

Change

Page 13, column 2, line 19, “below 600m is found” should be “below 500m is found”

Rationale: Correct a typo.

*TS2 Please provide a reference list entry including creators, title, and date of last access for all DOIs in this section.*

*TS3 Please provide date of last access.*

Levy, R., Hsu, C., et al., 2017. MODIS Atmosphere L2 Aerosol Product. NASA MODIS Adaptive Processing System, Goddard Space Flight Center, USA: <http://dx.doi.org/10.5067/MODIS/MOD04_L2.061>, last accessed Sep. 29, 2019.

Winker, D. (2016). CALIPSO LID L2 Standard HDF File - Version 4.10 [LID\_L2\_05kmAPro-Standard]. NASA Langley Research Center Atmospheric Science Data Center DAAC. <https://doi.org/10.5067/caliop/calipso/lid_l2_05kmapro-standard-v4-10>, last accessed Sep. 29, 2019.

McGill, M. (2016). CATS/ISS L2O D-M7.2 Version 3-00 05kmPro and CATS-ISS Level 2O N-M7.2 Version 3-00 05kmPro files. NASA Langley Research Center Atmospheric Science Data Center DAAC. <https://doi.org/10.5067/iss/cats/l2o_d-m7.2-v3-00_05kmpro>; <https://doi.org/10.5067/iss/cats/l2o_n-m7.2-v3-00_05kmpro>, last accessed Sep. 29, 2019.

Holben, B. N., Eck, T. F., Slutsker, I., Tanré, D. , Buis, J. P., Setzer, A., Vermote, E., Reagan, J. A., Kaufman, Y. J., Nakajima, T., Lavenu, F., Jankowiak, I., and Smirnov, A.: AERONET – A Federated Instrument Network and Data Archive for Aerosol Characterization, Remote Sens. Environ., 66, 1–16, https://doi.org/10.1016/S0034-4257(98)00031-5, 1998. last accessed Sep. 29, 2019.

*TS4 Please note that this section is only for the direct funding of the paper, and not for acknowledgements. Since the contents were the same, the wording here has not been changed.*

Fine.

Other corrections:

Page 1, column 1, line 23, “over north Africa and India” should be “over north Africa, the Middle East and India”

Page 2, column 2, line 82, “Feature\_Type\_Score\_FOV <= -2” should be “Feature\_Type\_Score\_Fore\_FOV <= -2”

Page 2, column 2, line 88-89, “Extincton\_Coefficient\_1064\_Fore\_FOV” should be “Extinction\_Coefficient\_1064\_Fore\_FOV”

Page 3, column 1, line 1, “will refer” should be “refers”

Page 9, Figure 5 caption, “(e) over land.” should be “(e) over land (including coastal profiles).”

Page 12, column 2, line 28-29, “at the altitude of 400 m.” should be “below 400 m.”