TS1 and TS2:

Dear editor, we are requesting numerical formatting change in Table 3 and 4 for consistency. In the old tables some numbers have one decimal place and some have zero and this may cause confusion. We would like to keep all numbers in these two tables with one decimal place. There is no change in values in the new tables. Thank you for considering this request.

**Table 3**. Within-model replication bias and uncertainty estimated from the scaled relative difference of the replicate analyses by Sunset and DRI Model 2015 analyzers, as well as the inter-model uncertainty calculated from the within-model replication uncertainties in the individual models.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Sunset** | | **DRI Model 2015** | | **Inter-model** |
|  | **(*n* = 519)** | | **(*n* = 518)** | |
| **Carbon Component** | **Bias (%)** | **Uncertainty (%)** | **Bias (%)** | **Uncertainty (%)** | **Uncertainty (%)** |
| **Total Carbon (TC)** | 0.0 | 2.9 | -0.2 | 3.0 | 4.1 |
| **Organic Carbon (OC)** | 0.1 | 3.6 | 0.0 | 3.5 | 5.0 |
| **Elemental Carbon (EC)** | -0.1 | 6.8 | -0.9 | 9.7 | 11.9 |
| **Pyrolyzed OC (OP)** | 1.3 | 12.8 | 0.8 | 55.6 | 57.1 |
| **OC1** | 0.4 | 26.5 | -2.2 | 49.8 | 56.4 |
| **OC2** | 0.1 | 7.9 | 0.6 | 10.3 | 12.9 |
| **OC3** | -0.3 | 7.7 | 0.0 | 7.2 | 10.6 |
| **OC4** | -0.4 | 16.3 | 0.6 | 11.0 | 19.7 |
| **EC1** | 0.3 | 6.6 | -0.4 | 10.6 | 12.5 |
| **EC2** | 0.0 | 16.4 | -2.7 | 22.5 | 27.8 |
| **EC3** | NA\* | | | | |

\*Too few (less than 20%) data points have mass loadings that are greater than 3 times the MDL

**Table 4**. Mean and standard deviation (1σ) of the average mass loading (in µg/cm2), arithmetic mass loading difference (in µg/cm2) and scaled relative difference (dimensionless) between the Sunset vs. DRI Model 2001 pair (left columns) and the Sunset vs. DRI Model 2015 pair (right columns) for bulk carbon components and their thermal fractions.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Carbon Fraction** | **Sunset (Y) to DRI Model 2001(X)**  **(*n* = 303)** | | | **Sunset(Y) to DRI -2015(X)**  **(*n* = 4073)** | | | |
|  | Average Mass Loading    (µg/cm2) | Arithmetic Difference  (µg/cm2) | Scaled Relative Difference ×100 | Average Mass Loading    (µg/cm2) | | Arithmetic Difference  (µg/cm2) | Scaled Relative Difference ×100 |
|  | Mean (± one standard deviation) | | | | | | |
| **Total Carbon (TC)** | 31.4 (± 17.4) | -1.0 (± 2.8) | -1.6 (± 5.4) | 26.7 (± 18.6) | -0.5 (± 2.0) | | -0.9 (± 6.0) |
| **Organic Carbon (OC)** | 22.0 (± 12.1) | -1.7 (± 3.0) | -4.6 (± 7.2) | 21.3 (± 16.2) | -1.4 (± 2.4) | | -4.1 (± 7.1) |
| **Elemental Carbon (EC)** | 9.4 (± 6.1) | 0.7 (± 1.5) | 6.5 (± 8.3) | 5.5 (± 3.7) | 0.9 (± 1.4) | | 11.2 (± 14.9) |
| **Pyrolyzed OC (OP)** | 4.7 (± 3.0) | 2.1 (± 2.8) | 37.6 (± 40.9) | 3.4 (± 4.3) | 2.9 (± 2.7) | | 66.1 (± 41.3) |
| **OC1** | 2.0 (± 2.2) | -2.3 (± 2.1) | -82.2 (± 30.9) | 1.1 (± 1.3) | -0.5 (± 1.4) | | -16.0 (± 62.5) |
| **OC2** | 6.8 (± 3.8) | 1.7 (± 1.7) | 17.1 (± 12.9) | 5.9 (± 4.4) | 0.8 (± 1.4) | | 11.3 (± 12.3) |
| **OC3** | 5.2 (± 3.1) | -0.7 (±1.5) | -10.7 (± 15.3) | 7.7 (± 5.6) | -1.7 (± 1.5) | | -18.1 (± 12.2) |
| **OC4** | 3.3 (± 1.6) | -2.6 (± 2.3) | -48.2 (± 24.4) | 3.2 (± 2.0) | -2.8 (± 2.3) | | -57.5 (± 23.7) |
| **EC1** | 12.8 (± 8.1) | 1.3 (± 2.7) | 5.4 (± 12.5) | 7.5 (± 6.2) | 2.6 (± 3.0) | | 21.9 (± 17.6) |
| **EC2** | 1.3 (± 0.7) | 1.5 (± 1.0) | 76.9 (± 22.7) | 1.3 (± 0.7) | 1.1 (± 0.6) | | 60.6 (± 25.0) |
| **EC3** | 0.1 (± 0.0) | 0.1(± 0.1) | 121.5 (± 51.1) | 0.1 (± 0.2) | 0.1 (± 0.2) | | 136.5 (± 23.2) |
| **OC1+2+3+4** | 17.3 (± 9.7) | -3.8 (±3.8) | -14.0 (±10.2) | 17.9 (± 12.5) | -4.3 (± 4.0) | | -15.5 (± 9.1) |
| **EC1+2+3** | 14.1 (± 8.4) | 2.8 (±2.6) | 14.1 (±9.3) | 8.9 (± 6.5) | 3.8 (± 3.2) | | 29.4 (± 14.8) |