**Table T1.** Ad-hoc and universal *C*T regression coefficients and interaction terms (Int.).

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Intercept | T | S | DO | N | Si | P | Int. | Int. | Int. | Int. |
| North Pacific summer | 1066.9 | – | 24.16 | 0.38 | 5.07 | – | – | – | – | – | – |
| North Pacific winter | 868.73 | -7.95 | 36.54 | – | – | 4.73 | – | -0.01\*Si\*DO | – | – | – |
| Southern Ocean summer | 698.74 | – | 35.84 | 0.25 | – | 0.42 | 83.28 | – | – | – | – |
| Southern Ocean winter | 1494.14 | -48.81 | 22.3 | -0.31 | – | 0.48 | – | 0.03\*T\*DO | 0.92\*T\*S | – | – |
| Northwest Atlantic summer | 1709.15 | – | 9.13 | – | 9.14 | – | – | – | – | – | – |
| Northwest Atlantic winter | 1128.79 | -5.93 | 28.71 | – | 17.31 | – | – | -0.05\*N\*DO | – | – | – |
| Northeast Atlantic summer | 1625.17 | – | 12.35 | – | 6.13 | – | – | – | – | – | – |
| Northeast Atlantic winter | 1013.95 | 61.48 | 32.75 | – | -61.93 | -2.05 | -12.54 | 0.4\*N\*Si | -0.3\*T\*DO | -1.67\*T\*S | 1.78\*N\*S |
| Equatorial Pacific | 467.55 | -7.11 | 48.4 | – | 2.34 | 1.44 | 38.85 | – | – | – | – |
| Subtropical North Pacific summer | 519.77 | -9.98 | 48.97 | – | 20.25 | – | 1.92 | – | – | – | – |
| Subtropical North Pacific winter | 236.82 | -5.32 | 50.65 | 0.38 | -1.5 | – | 139.22 | – | – | – | – |
| Subtropical South Pacific summer | 147.12 | -4.61 | 52.63 | 0.34 | 7.48 | 1.67 | 72.68 | – | – | – | – |
| Subtropical South Pacific winter | 643.05 | -12.01 | 46.68 | – | – | -1.28 | 107.88 | – | – | – | – |
| Indian Ocean summer | 551.82 | -6.59 | 45.21 | – | – | – | 27.16 | 0.14\*S\*N | – | – | – |
| Indian Ocean winter | 1733.55 | -1.84 | – | -4.78 | 18.13 | 2.64 | 67.1 | 0.17\*DO\*S | – | – | – |
| Subtropical North Atlantic summer | 619.34 | -8.18 | 46.94 | -0.37 | -31.07 | – | – | – | – | – | – |
| Subtropical North Atlantic winter | 765 | -7.36 | 39.89 | – | – | -4.88 | 109.27 | – | – | – | – |
| Equatorial Atlantic | 163.5 | -8.91 | 59.32 | -0.17 | – | – | – | – | – | – | – |
| Subtropical South Atlantic | 2277.89 | -6.15 | – | -7.48 | -5.08 | – | 74.92 | 0.2\*DO\*S | – | – | – |
| Universal model | 596.77 | -8.21 | 45.5 | -0.17 | 1.12 | 0.45 | 17.83 | 0.01\*T\*DO | 1.52\*T\*P | – | – |

**Table T2.** Ad-hoc and universal *A*T regression coefficients and interaction terms (Int.).

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Intercept | T | S | S2 | DO | Si | P | Int. | Int. | Int. |
| Subtropical Oceans | 2064.66 | -0.3 | -47.57 | 1.54 | 0.13 | -1.12 | 10.1 | – | – | – |
| Equatorial Pacific | 1142.6 | -1.39 | – | 0.96 | 0.14 | – | -3.51 | – | – | – |
| North Atlantic | 1543.52 | -4.78 | – | 0.64 | -0.04 | -0.29 | -9.04 | 0.13\*S\*T | – | – |
| North Pacific | 721.6 | – | 44.31 | – | 0.09 | -7.81 | 9.97 | 0.24\*S\*Si | – | – |
| Southern Ocean | 7661.04 | -1.46 | -362.53 | 5.86 | 0.54 | -12.17 | -6.56 | 0.08\*S\*T | 0.44\*S\*Si | -0.01\*DO\*Si |
| Global | 1972.44 | -12.78 | -33.44 | 1.19 | 0.16 | 0.39 | 6.89 | 0.37\*S\*T | – | – |