|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Table S13**. Generalized additive models (GAM) testing treatment (burned vs. unburned) and factor-smooth interaction effects on carbon dioxide (CO2) and methane (CH4) emissions from experimental mesocosms. Separate smoothers were fit for burned and unburned data, and ANOVA tables were generated by *anova.gam*(). | | | | | |
| **Carbon dioxide (μM)** | |  |  |  |  |
|  | *Effect* | *df /edf* | *Ref.df* | *F* | *p-value* |
| Day-0 | Treatment | 1 | – | 14.620 | **<0.001** |
|  | s(plant material) : burned | 1.000 | 1.000 | 11.505 | **0.003** |
|  | s(plant material) : unburned | 3.966 | 4.815 | 3.342 | **0.026** |
|  |  |  |  |  |  |
| Day-10 | Treatment | 1 | – | 9.680 | **0.005** |
|  | s(plant material) : burned | 2.070 | 2.556 | 166.0 | **<0.001** |
|  | s(plant material) : unburned | 3.062 | 3.748 | 150.6 | **<0.001** |
|  |  |  |  |  |  |
| Day-31 | Treatment | 1 | – | 0.344 | 0.563 |
|  | s(plant material) : burned | 2.661 | 3.267 | 51.80 | **<0.001** |
|  | s(plant material) : unburned | 3.495 | 4.261 | 23.07 | **<0.001** |
|  |  |  |  |  |  |
| Day-59 | Treatment | 1 | – | 2.476 | 0.129 |
|  | s(plant material) : burned | 2.808 | 3.443 | 13.27 | **<0.001** |
|  | s(plant material) : unburned | 1.000 | 1.000 | 29.70 | **<0.001** |
|  |  |  |  |  |  |
| **Methane (nM)** | |  |  |  |  |
| Day-0 | Treatment | 1 | – | 2.038 | 0.166 |
|  | s(plant material) | 1.000 | 1.000 | 0.718 | 0.405 |
|  |  |  |  |  |  |
| Day-10 | Treatment | 1 | – | 0.266 | 0.611 |
|  | s(plant material) : burned | 1.812 | 2.243 | 0.889 | 0.428 |
|  | s(plant material) : unburned | 3.346 | 4.086 | 6.531 | **0.001** |
|  |  |  |  |  |  |
| Day-31 | s(plant material) | 1 | 1.001 | 0.190 | 0.667 |
|  |  |  |  |  |  |
| Day-59 | Treatment | 1 | – | 3.646 | 0.068 |
|  | s(plant material) | 3.381 | 4.127 | 2.037 | 0.113 |
| *Treatment* indicates the parametric term in GAM, *s(plant material)* is the smooth term for either burned or unburned treatments. *df* = degrees of freedom for parametric terms; *edf* = effective degrees of freedom for smoother terms; *Ref.df* = reference degree of freedom, where dashes indicate NA for parametric terms. Significant effects (p<0.05) are in bold. | | | | | |