|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **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 | – | 14.980 | **<0.001** |
|  | s(plant material) : burned | 1.000 | 1.000 | 10.566 | **0.004** |
|  | s(plant material) : unburned | 4.022 | 4.880 | 3.383 | **0.024** |
|  |  |  |  |  |  |
| Day-10 | Treatment | 1 | – | 9.403 | **0.005** |
|  | s(plant material) : burned | 2.047 | 2.527 | 155.7 | **<0.001** |
|  | s(plant material) : unburned | 2.966 | 3.633 | 144.2 | **<0.001** |
|  |  |  |  |  |  |
| Day-31 | Treatment | 1 | – | 0.427 | 0.520 |
|  | s(plant material) : burned | 2.499 | 3.072 | 52.20 | **<0.001** |
|  | s(plant material) : unburned | 3.422 | 4.176 | 22.47 | **<0.001** |
|  |  |  |  |  |  |
| Day-59 | Treatment | 1 | – | 2.341 | 0.140 |
|  | s(plant material) : burned | 2.744 | 3.366 | 11.86 | **<0.001** |
|  | s(plant material) : unburned | 1.000 | 1.000 | 28.09 | **<0.001** |
|  |  |  |  |  |  |
| **Methane (μM)** | |  |  |  |  |
| 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 | 1.813 | 2.244 | 0.890 | 0.427 |
|  | s(plant material) : unburned | 3.346 | 4.086 | 6.530 | **0.001** |
|  |  |  |  |  |  |
| Day-31 | s(plant material) | 1 | 1.001 | 0.190 | 0.667 |
|  |  |  |  |  |  |
| Day-59 | Treatment | 1 | – | 3.645 | 0.068 |
|  | s(plant material) | 3.381 | 4.127 | 2.038 | 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. | | | | | |