|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Table S12**. Model selection for greenhouse gas concentrations – carbon dioxide (CO2 μM) and methane (CH4 nM) – with candidate GAM models\* assessed in before and 3 time point after the addition of burned or unburned plant material to experimental mesocosms. | | | | | | |
| *Metric* | *Time* | *Model* | | *df* | *AIC* | *ΔAIC* | |
| CO2 | Day-0 | | Treatment +s(plant material, by=Treatment) | 8.8 | **153.1** | -20.4 | |
|  |  | | Treatment + s(plant material) | 4.0 | 168.0 |  | |
|  |  | | s(plant material) | 3.0 | 173.4 |  | |
|  | Day-10 | | Treatment +s(plant material, by=Treatment) | 9.2 | **269.4** | -9.1 | |
|  |  | | Treatment + s(plant material) | 6.6 | 272.2 |  | |
|  |  | | s(plant material) | 5.4 | 278.6 |  | |
|  | Day-31 | | Treatment +s(plant material, by=Treatment) | 10.2 | **266.6** | -15.8 | |
|  |  | | Treatment + s(plant material) | 4.0 | 284.2 |  | |
|  |  | | s(plant material) | 3.0 | 282.4 |  | |
|  | Day-59 | | Treatment +s(plant material, by=Treatment) | 7.2 | **270.2** | -10.0 | |
|  |  | | Treatment + s(plant material) | 5.4 | 280.3 |  | |
|  |  | | s(plant material) | 4.3 | 280.2 |  | |
|  |  | |  |  |  |  | |
| CH4 | Day-0 | | Treatment +s(plant material, by=Treatment) | 5.0 | 132.9 | -0.2 | |
|  |  | | Treatment + s(plant material) | 4.0 | **131.5** |  | |
|  |  | | s(plant material) | 3.0 | 131.7 |  | |
|  | Day-10 | | Treatment +s(plant material, by=Treatment) | 9.3 | **159.6** | -5.3 | |
|  |  | | Treatment + s(plant material) | 6.0 | 166.7 |  | |
|  |  | | s(plant material) | 5.1 | 164.9 |  | |
|  | Day-31 | | Treatment +s(plant material, by=Treatment) | 5.9 | 198.2 |  | |
|  |  | | Treatment + s(plant material) | 4.0 | 196.7 |  | |
|  |  | | s(plant material) | 3.0 | **195.4** | 0.0 | |
|  | Day-59 | | Treatment +s(plant material, by=Treatment) | 5.0 | 227.7 |  | |
|  |  | | Treatment + s(plant material) | 7.1 | **223.7** | -2.3 | |
|  |  | | s(plant material) | 5.9 | 226.0 |  | |
| *\*Treatment +* *s(plant material, by= Treatment)* GAM has parametric terms (*Treatment*) and separate smoothers for each treatment. *Treatment + s(plant material)* GAM has a global smoother allowing for off-set intercepts according to treatments. The *s(plant material)* GAM fits a global smoother to all data. *Bold* represents the selected models. Delta AIC (*ΔAIC*) is the difference between the selected model and the global smoother model | | | | | | |
|  | | | | | | |