**Table S1.** Study site information. Figure 1 shows in a map the study locations

|  |  |  |  |
| --- | --- | --- | --- |
| **Site ID** | **Longitude** | **Latitude** | **Year of sampling** |
| 1 | 41.6168 | 18.0087 | 2017 |
| 2 | 41.5674 | 18.1175 | 2017 |
| 3 | 40.7412 | 19.5283 | 2016 |
| 4 | 40.6464 | 19.6155 | 2016 |
| 5 | 40.2202 | 20.1596 | 2016 |
| 6 | 40.2202 | 20.1596 | 2016 |
| 7 | 39.0852 | 22.2815 | 2015 |
| 8 | 39.1304 | 22.3920 | 2015 |
| 9 | 39.1308 | 22.3933 | 2016 |
| 10 | 38.9970 | 22.7517 | 2015 |
| 11 | 38.8800 | 22.9347 | 2016 |
| 12 | 38.8457 | 22.9707 | 2015 |
| 13 | 37.1135 | 25.3074 | 2017 |
| 14 | 36.9089 | 25.3681 | 2016 |
| 15 | 36.5766 | 25.7151 | 2016 |
| 16 | 36.5605 | 25.7171 | 2016 |
| 17 | 36.7081 | 25.9930 | 2017 |
| 18 | 36.0107 | 26.9152 | 2017 |

**Table S2**. Results of the statistical analyses associated to Figures 2, 3, and 4.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Independent factor** | **Dependent variable** | **Best Model** | **R-squared** | **p-value** |
| **Figure 2** |  |  |  |  |
| Latitude | Tree height | Linear | <0.001 | 0.973 |
| Latitude | Branch elongation | Polynomial | 0.292 | 0.041 |
| Latitude | Internode production | Linear | 0.009 | 0.304 |
| Latitude | Leaf %N | Linear | <0.001 | 0.954 |
| Latitude | Leaf %P | Linear | <0.001 | 0. 822 |
| Latitude | Leaf %Fe | Linear | <0.001 | 0.395 |
| Latitude | Chl a | Polynomial | 0.190 | 0.125 |
| Latitude | Pmax | Linear | <0.001 | 0.646 |
| Latitude | Quantum yield | Linear | 0.853 | <0.001 |
| **Figure 3** |  |  |  |  |
| Leaf %P | Leaf %N | Polynomial | 0.233 | 0.033 |
| Leaf %Fe | Leaf %N | Linear | 0.045 | 0.213 |
| Leaf %Fe | Leaf %P | Linear | <0.001 | 0.299 |
| Sediment %N | Leaf %N | Linear | <0.001 | 0.642 |
| Sediment %P | Leaf %P | Linear | 0.228 | 0.035 |
| Sediment %Fe | Leaf %Fe | Linear | 0.039 | 0.224 |
| **Figure 4** |  |  |  |  |
| Leaf %N | Tree height | Linear | 0.694 | <0.001 |
| Leaf %N | Branch elongation | Polynomial | 0.226 | 0.07 |
| Leaf %N | Internode production | Linear | 0.356 | 0.056 |
| Leaf %N | Chl a | Linear | 0.887 | <0.001 |
| Leaf %N | Pmax | Polynomial | 0.157 | 0.281 |
| Leaf %N | Quantum yield | Linear | <0.001 | 0.605 |

**Figure S1.** Photosynthetic Active Radiation (PAR) vs relative electron transport rate (ETRr) on 8 study sites obtained using a PAM (Pulse Amplitude Modulated Diving; Walz, Germany). Rapid Light Curves were fitted to the eight ETRr measurements per sample using the equations defined by Eilers and Peeters (1988), and then maximum ETRr was obtained from each curve.

