

**Table S4.** Percentage change (%) and lnRR of factors in response to warming under different intensity (eCO<sub>2</sub>). TC, total carbon; SWC, soil water content; FN, foliar nitrogen; FP, foliar phosphorus; FV/FM, Maximum quantum yield of PSII; SLA, specific leaf area; WUE, water use efficiency; Pn, net photosynthetic rate; Gs, stomatal conductance; T, transpiration rate;  $\delta^{13}\text{C}$ , carbon stable isotope composition; SD, stomatal density; SS, stomatal size.

| Variables             | Warming<br>intensity_eCO <sub>2</sub><br>(ppm) | QM    | P(QM)   | RR (%) | lnRR   | 95%CI          |
|-----------------------|------------------------------------------------|-------|---------|--------|--------|----------------|
| SWC                   | >420                                           | 1.74  | 0.9     | 14.98  | 0.14   | [-0.03,0.31]   |
|                       | <420                                           | 18.9  | 0.0003  | 54.3   | 0.434  | [0.17,0.7]     |
| FN                    | >420                                           | 18.9  | 0.0003  | -7.12  | -0.074 | [-0.19,0.05]   |
|                       | >700                                           | 18.9  | 0.0003  | -40.78 | -0.524 | [-0.91, -0.14] |
| FP                    | >420                                           | 0.8   | 0.7     | -7.56  | -0.079 | [-0.21,0.05]   |
|                       | <420                                           | 1.2   | 0.75    | -21.02 | -0.236 | [-0.7,0.22]    |
| FV/FM                 | >420                                           | 1.2   | 0.75    | -6.03  | -0.062 | [-0.34,0.22]   |
|                       | >700                                           | 1.2   | 0.75    | 0      | 0      | [-0.51,0.51]   |
| Chlorophyll           | >420                                           | 2.7   | 0.25    | -12.91 | -0.138 | [-0.32,0.04]   |
|                       | >700                                           | 2.7   | 0.25    | -36.36 | -0.452 | [-1.74,0.84]   |
| SLA                   | >420                                           | 15.64 | 0.0004  | -13.77 | -0.148 | [-0.24, -0.06] |
|                       | >700                                           | 15.64 | 0.0004  | -26.83 | -0.312 | [-0.6, -0.03]  |
| WUE                   | <420                                           | 66.57 | <0.0001 | 10.3   | 0.098  | [-0.27,0.47]   |
|                       | >420                                           | 66.57 | <0.0001 | 43.91  | 0.364  | [0.24,0.49]    |
|                       | >700                                           | 66.57 | <0.0001 | 101.38 | 0.7    | [0.46,0.94]    |
| Pn                    | <420                                           | 60.28 | <0.0001 | 325.03 | 1.447  | [0.8,2.1]      |
|                       | >420                                           | 60.28 | <0.0001 | 32.01  | 0.278  | [0.18,0.38]    |
|                       | >700                                           | 60.28 | <0.0001 | 45.70  | 0.376  | [0.17,0.58]    |
| Gs                    | >420                                           | 15.17 | 0.0005  | -16.19 | -0.177 | [-0.28, -0.07] |
|                       | >700                                           | 15.17 | 0.0005  | -18.39 | -0.203 | [-0.4,0]       |
| T                     | >420                                           | 13.1  | 0.001   | -11.7  | -0.124 | [-0.19, -0.05] |
|                       | >700                                           | 13.1  | 0.001   | -5.53  | -0.057 | [-0.17,0.06]   |
| $\delta^{13}\text{C}$ | <420                                           | 14.12 | 0.003   | 9.63   | 0.092  | [-0.06,0.24]   |
|                       | >420                                           | 14.12 | 0.003   | 7.61   | 0.073  | [0.01,0.14]    |
|                       | >700                                           | 14.12 | 0.003   | 15.18  | 0.141  | [0.04,0.24]    |
| SD                    | >420                                           | 29.97 | <0.0001 | -27.75 | -0.325 | [-0.45,-0.2]   |
|                       | >700                                           | 29.97 | <0.0001 | 48.85  | 0.398  | [-0.09,0.89]   |
| SS                    | >420                                           | 0     | 1       | -36.8  | -0.459 | [-1.07,0.16]   |