Supplementary Information

Dynamic balancing of isoprene carbon sources reflects photosynthetic and photorespiratory responses to temperature stress

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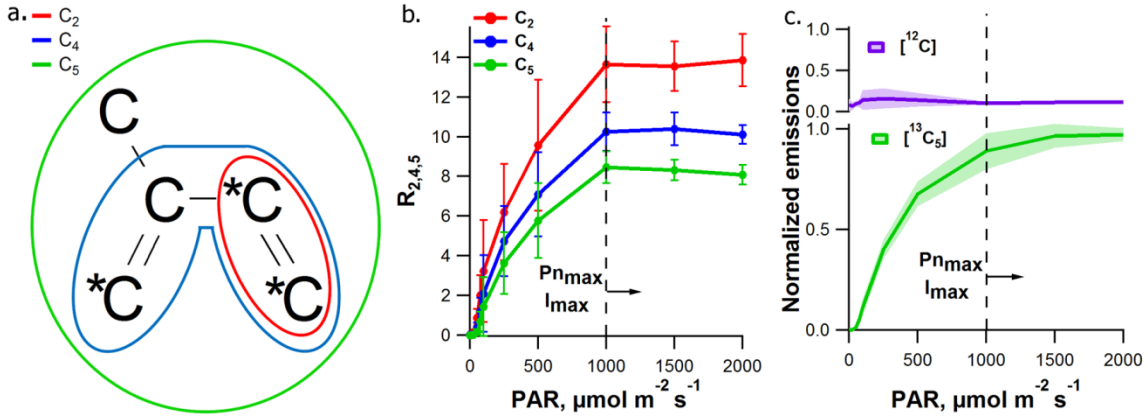

Figure S1: GC-MS ^{13}C-labeling analysis of isoprene emissions from 4 mango leaves during photosynthesis under $^{13}CO_2$ as a function of PAR. **a)** Structure of isoprene GC-MS fragment ions with two carbon atoms (C_2, red) and four carbon atoms (C_4, blue) together with the isoprene parent ion with five carbon atoms (C_5, green). Carbon atoms derived from glyceraldehyde-3-phosphate (GA3P) and pyruvate are shown as *C and C respectively. **b**) Average $^{13}C/^{12}C$ isotope ratios (R) of C_2 (2:^{13}C/0:^{13}C, R_2 = m/z 29/27) and C_4 (4:^{13}C/0:^{13}C, R_4 = m/z 57/53) fragment ions and C_5 (5:^{13}C/0:^{13}C, R_5 = m/z 73/68) parent ions. **c**) Average emission rates for [^{12}C]isoprene (m/z 68) and [$^{13}C_5$]isoprene (m/z 73) normalized to the maximum emissions of [$^{13}C_5$]isoprene. [^{12}C]isoprene emissions were low and variable while [$^{13}C_5$]isoprene increased with PAR. Vertical dashed lines represent optimum PAR range for net photosynthesis (Pn_{max}) and isoprene emissions (I_{max}) determined from the $^{12}CO_2$ studies (see **Figure 1** of the main manuscript).