**Extended Data Figure 3: Hourly Canopy Temperature Analysis**

**Hourly ring means for canopy temperature during the period of canopy closure (when LAI > 3) are presented in the files:**

‘hourly\_canopy\_T\_2004.csv’

‘hourly\_canopy\_T\_2005.csv’

‘hourly\_canopy\_T\_2006.csv’

‘hourly\_canopy\_T\_2007.csv’

‘hourly\_canopy\_T\_2009.csv’

‘hourly\_canopy\_T\_2010.csv’

‘hourly\_canopy\_T\_2011.csv’

**The .csv files contain the following columns:**

A: block (experimental replicate)

B: ring (treatment plot)

C: CO2 (CO2 treatment; ambient or elevated)

D: hour (time, with 0 representing midnight-1 a.m., and 23 representing 11 p.m.-midnight)

E: canopy\_t (hourly average canopy temperature (°C) during the period when LAI was greater than 3)

**Hourly canopy temperature data are analyzed via ANOVA in the SAS files:** ‘2004\_hourly\_canopy\_T\_analysis.sas’

‘2005\_hourly\_canopy\_T\_analysis.sas’

‘2006\_hourly\_canopy\_T\_analysis.sas’

‘2007\_hourly\_canopy\_T\_analysis.sas’

‘2009\_hourly\_canopy\_T\_analysis.sas’

‘2010\_hourly\_canopy\_T\_analysis.sas’

‘2011\_hourly\_canopy\_T\_analysis.sas’

Model-corrected treatment means (lsmeans) during daylight hours are used to calculate the ‘delta canopy temp’ values as (canopy temperature in elevated CO2 – canopy temperature in ambient CO2). These delta canopy temp values are presented in the file ‘Hourly\_canopy\_temperature\_effect\_2004thru2011.xlsx’, and are plotted in extended data figure 3.