Stem hydraulic capacitance of *Quercus ilex* trees subjected to long-term throughfall exclusion

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Hypothesis & objective

Throughfall exclusion setup

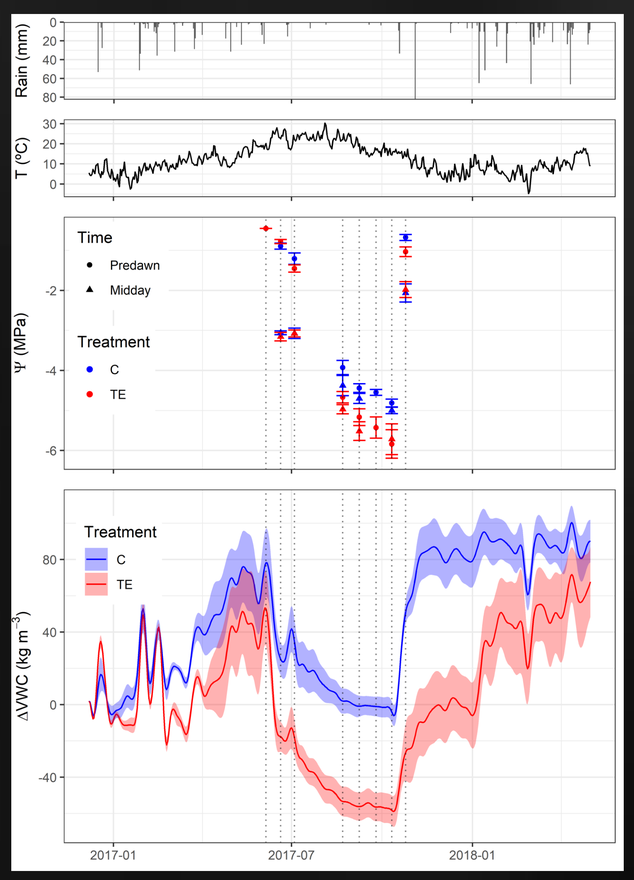
Changes in hydraulic allometry, commonly observed as a strategy to face drought-stress, may alter stem hydraulic capacitance (Cs).

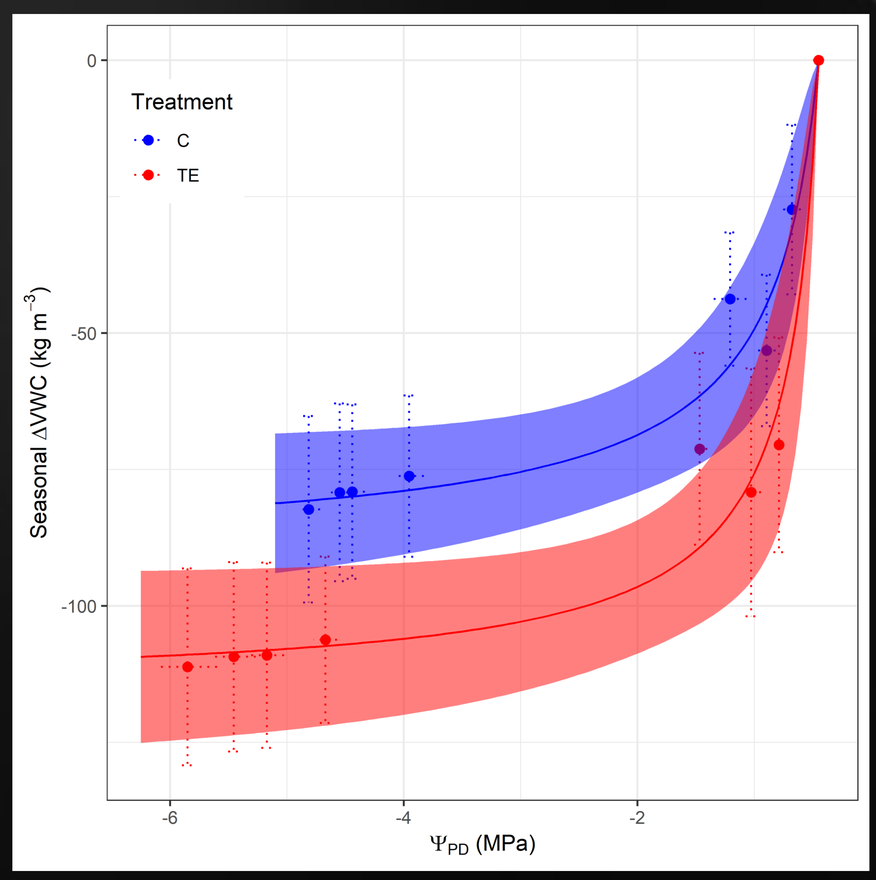
Stem volumetric water content

Stem volumetric water content (VWC), predawn and midday leaf water potential (Ψ_{PD} and Ψ_{MD}, respectively) and C_S were compared between *Quercus ilex* trees subjected to continuous long-term throughfall exclusion (TE) and control (C) conditions.

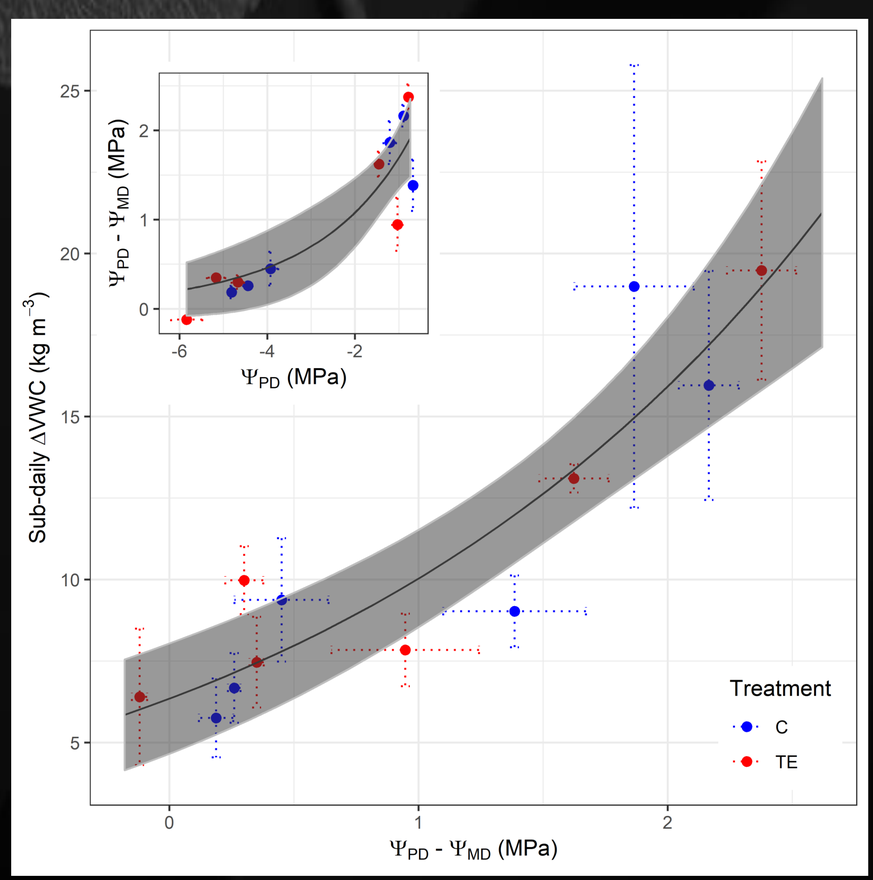
Main results & conclusion

Seasonal desorption curve





Sub-daily desorption curve



On a seasonal basis, C_S was higher in TE relative to C trees at the beginning of the dry season (218 and 124 kg MPa^{-1} m^{-3} , respectively). During summer drought, C_S was reduced to values below 10 kg MPa^{-1} m^{-3} and did not differ between treatments.

Sub-daily fluctuations in VWC were also reduced along summer drought and remained roughly homeostatic between treatments.

Permanent drought-stress → **Hydraulic allometry adjustments** → **Increased seasonal C_S** → **Increased ability to dampen Ψ reductions**

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Photography encouraged