

Supplemental Information

Momentum and scalar transport within a vegetation canopy following atmospheric stability and seasonal canopy changes: the CHATS experiment

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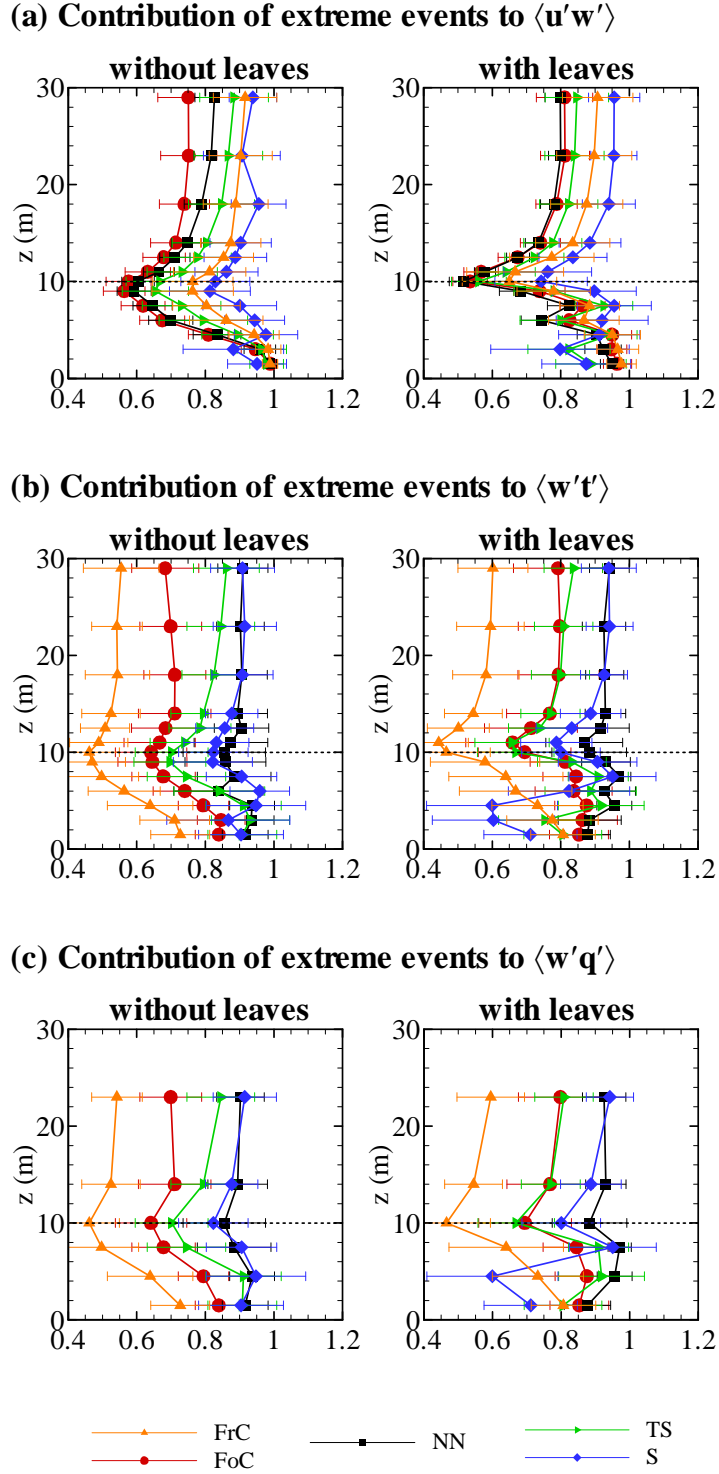


Fig. S1. **(a)** Fraction of the momentum flux $\langle u'w' \rangle$, **(b)** heat flux $\langle w't' \rangle$, and **(c)** water vapor flux $\langle w'q' \rangle$ due to extreme events ($H=3$) across the five stability regimes and two seasonal periods. Error bars indicate the standard deviation of the fractions. The dashed line indicates the canopy top.

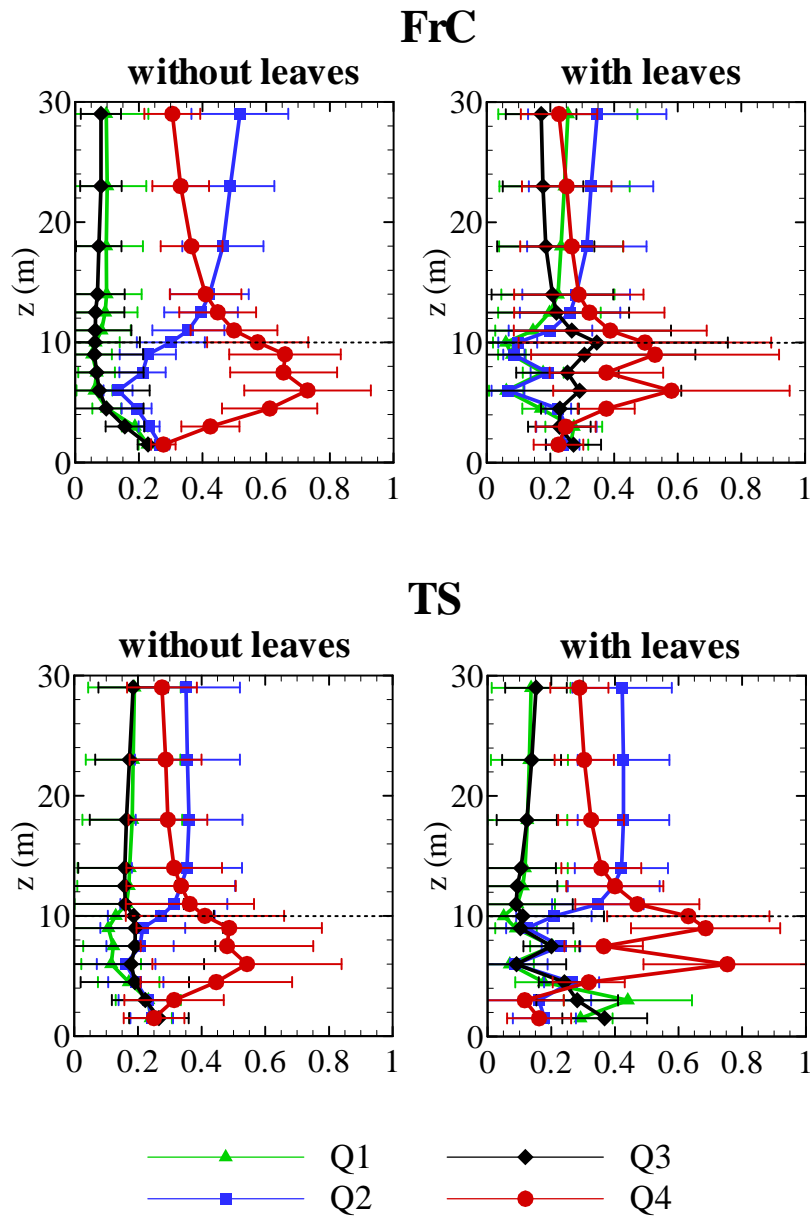
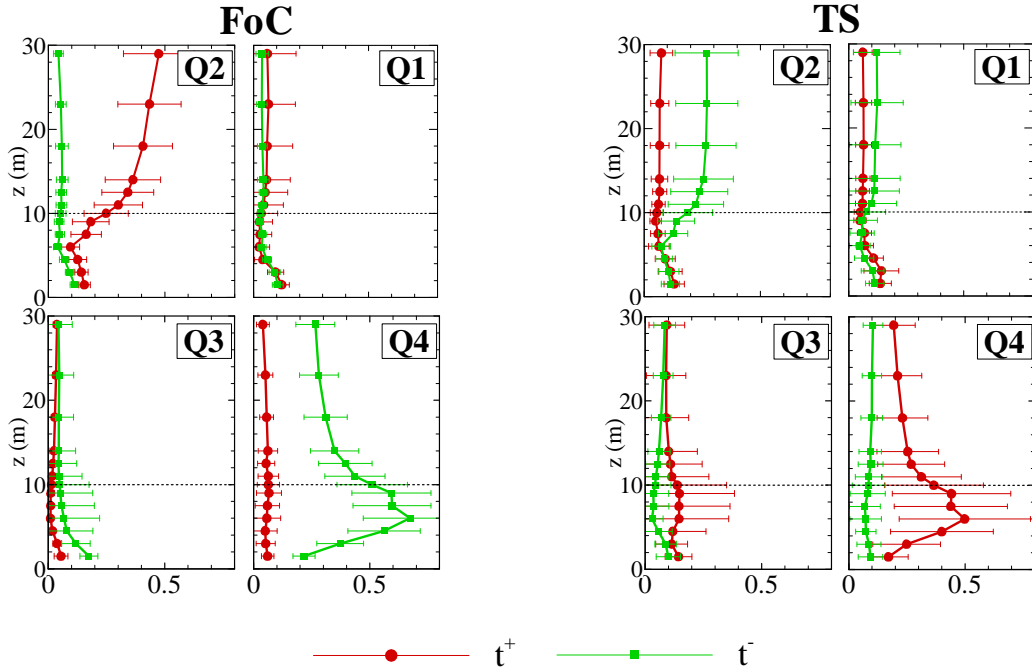


Fig. S2. Fraction of the momentum flux $\langle u'w' \rangle$ in each momentum quadrant as defined in Eq. 3 across the two intermediate stability regimes (FoC and TS) and two seasonal periods. Quadrants are defined in Table 2. Error bars indicate the standard deviation of the fractions. The dashed line indicates the canopy top.

(a) temperature fluctuations



(b) water vapor fluctuations

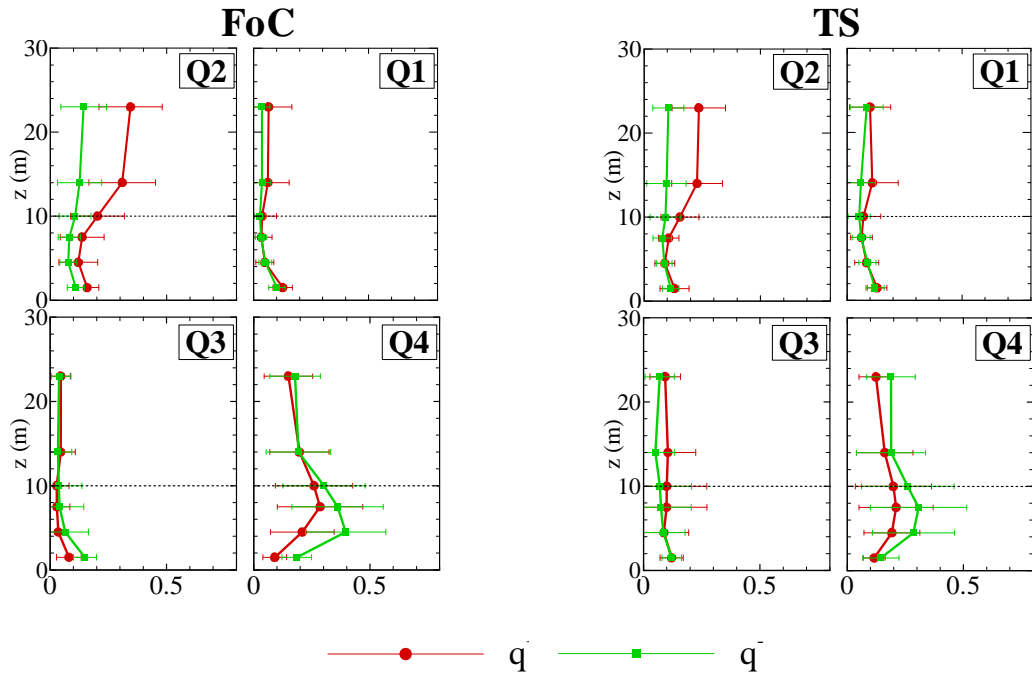
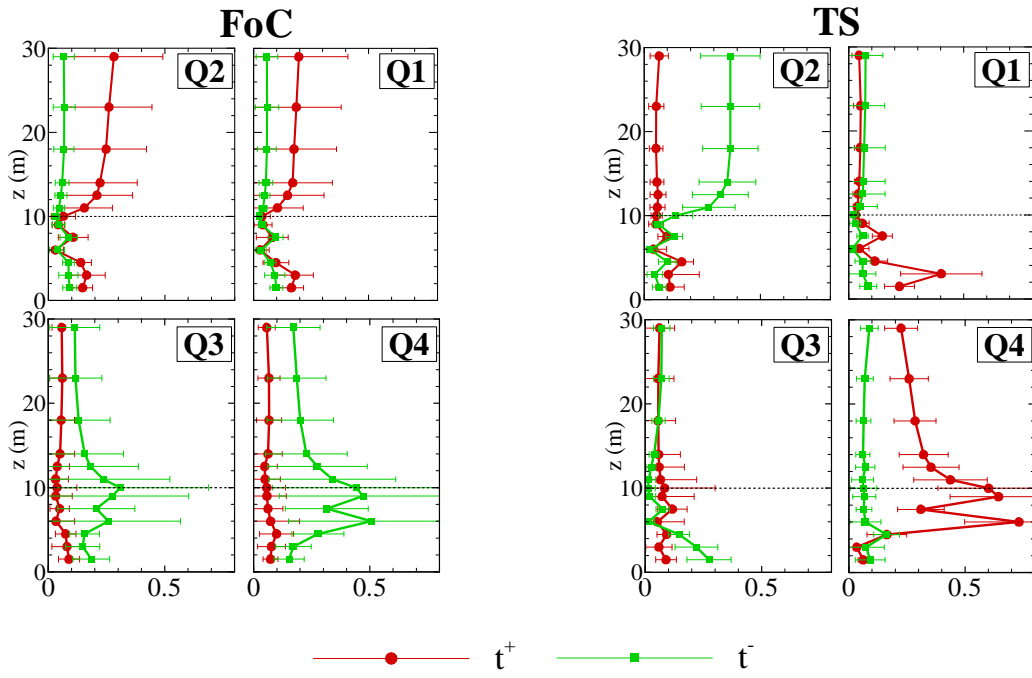


Fig. S3. Fraction of the momentum flux $\langle u'w' \rangle$ in each momentum quadrant and associated with positive or negative **(a)** temperature and **(b)** water vapor fluctuations, as defined in Eqs. 6 and 7. The two intermediate stability regimes (FoC and TS) are presented for the period with no-leaves. The quadrants are defined in Table 2. Error bars indicate the standard deviation of the fractions. The dashed line indicates the canopy top.

(a) temperature fluctuations



(b) water vapor fluctuations

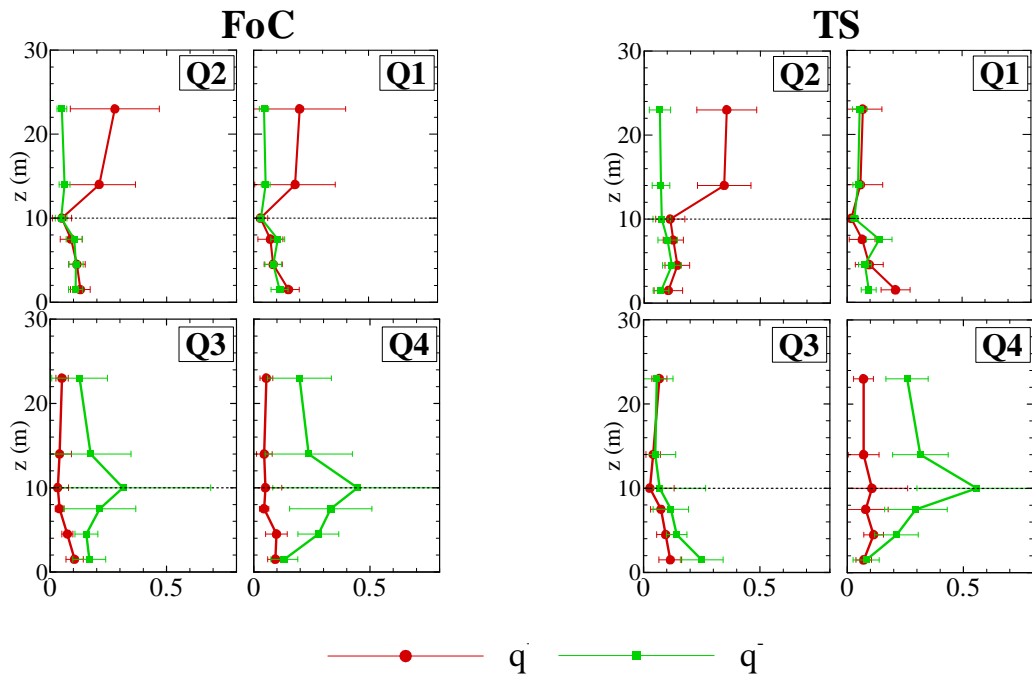


Fig. S4. Same as Fig. S3, but for the period with-leaves.

(a) Heat flux

(b) Water vapor flux

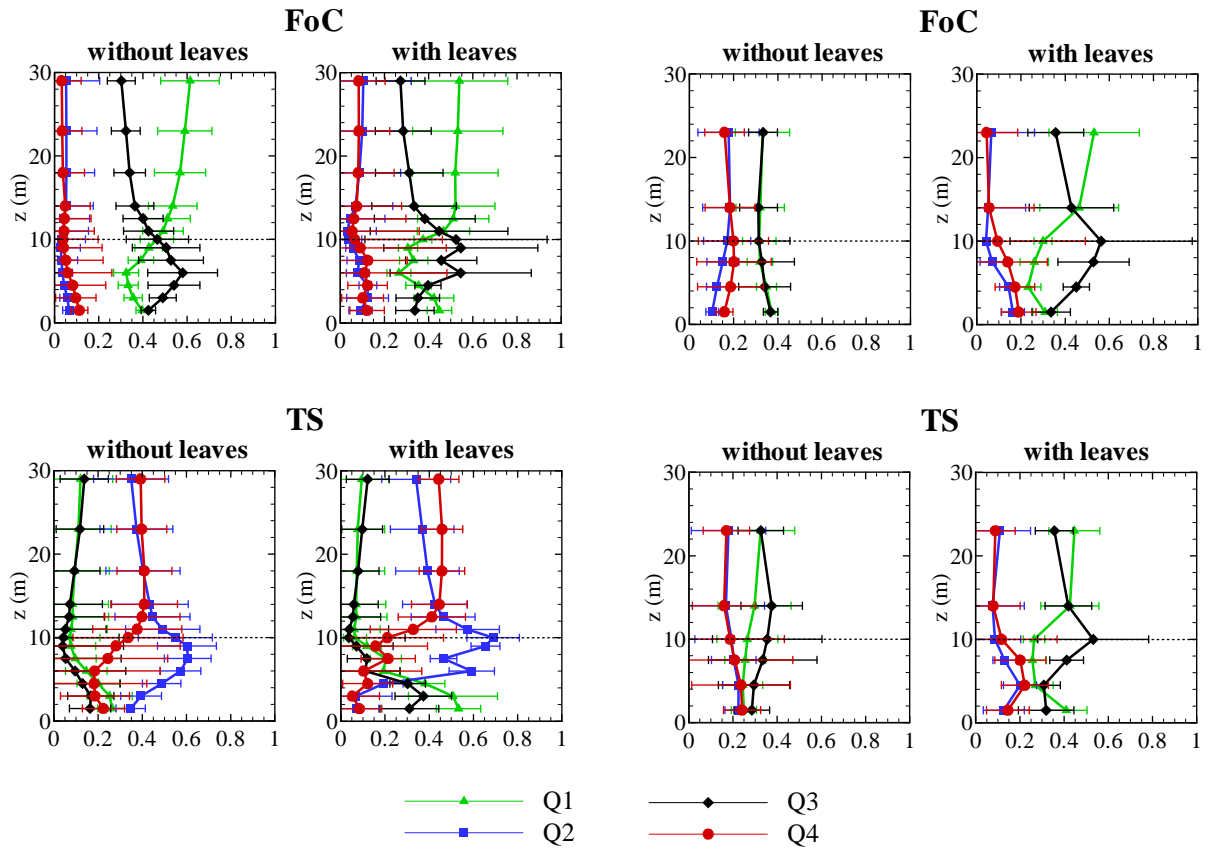


Fig. S5. Fraction of the **(a)** heat flux $\langle w't' \rangle$ and **(b)** water vapor flux $\langle w'q' \rangle$ within in each quadrant as defined in Eq. 3 for the two intermediate stability regimes (FoC and TS) and the two seasonal periods. The quadrants are defined in Table 2. Error bars indicate the standard deviation of the fractions. The dashed line indicates the canopy top.