The role of dew and radiation fog inputs in the local water cycling of a temperate grassland during dry spells in central Europe

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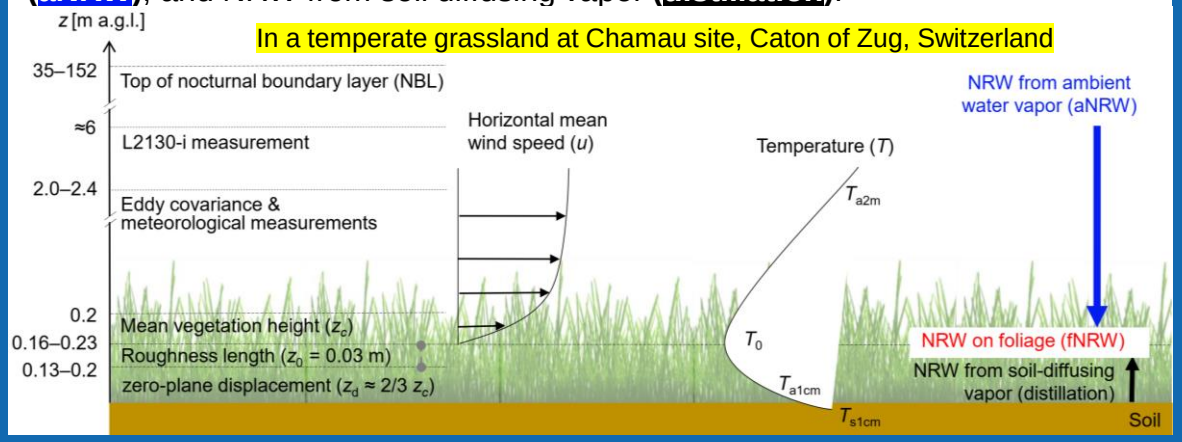
❑ NRW on foliage (**fNRW**) is a mixture of NRW from ambient water vapor (**aNRW**), and NRW from soil diffusing vapor (**distillation**).



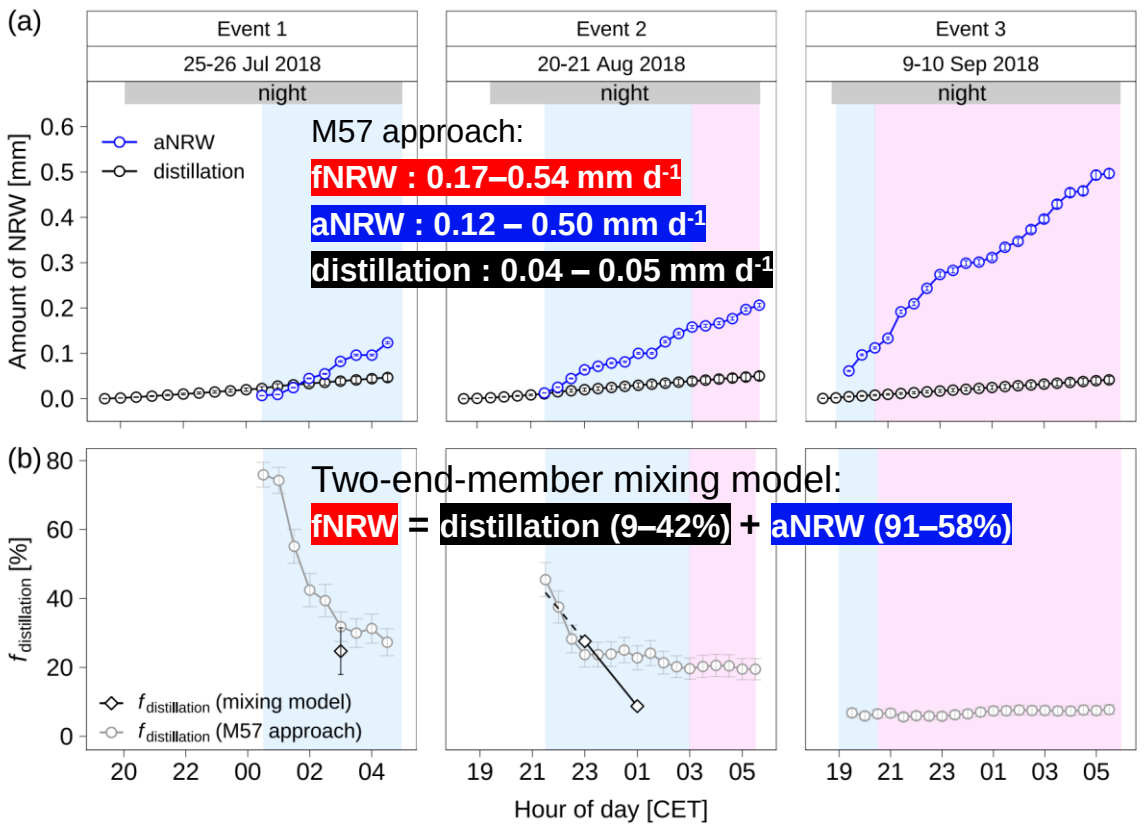
NRW: non-rainfall water
T_{s1cm}: soil temperature at 1 cm in depth

T_0: surface temperature computed from radiation flux
T_{a2m}: air temperature at standard 2 m a.g.l.

❑ **Contribution of aNRW (91–58%) and distillation ($f_{distillation}$: 9–42%) in fNRW:**

✓ 1) Using two-end-member mixing model, in comparison to

✓ 2) Monteith 1957 (M57) approach by calculating NRW amount (0.17–0.54 mm d^{-1})



❑ **Isotopic composition of fNRW, aNRW, and distillation**

fNRW: taken from leaf surfaces

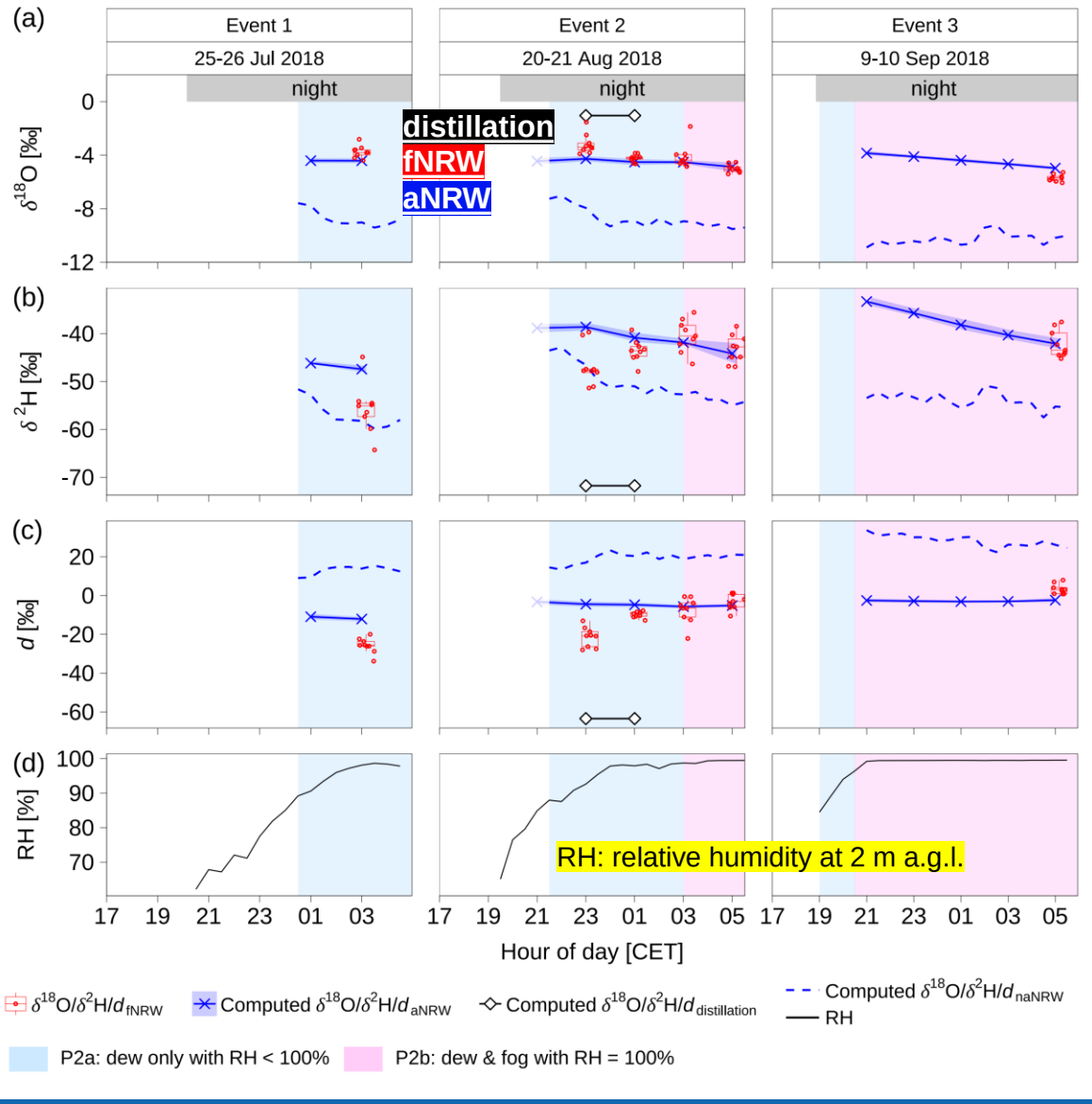
aNRW: equilibrium from water vapor isotopes

Distillation: computed from two-end-member mixing model

❑ **Dew and fog processes are equilibrium fractionation dominant**

✓ 1) aNRW is closer to fNRW with RH=100%, and deviated from fNRW with RH<100% due to distillation.

✓ 2) naNRW: computed NRW from water vapor isotopes considering non-equilibrium fractionation factors, which severely deviated from fNRW;



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Monteith, J.L., 1957. Dew. Quarterly Journal of the Royal Meteorological Society, 83(357), pp.322-341.