Investigating NH_3 exchange between forest and atmosphere

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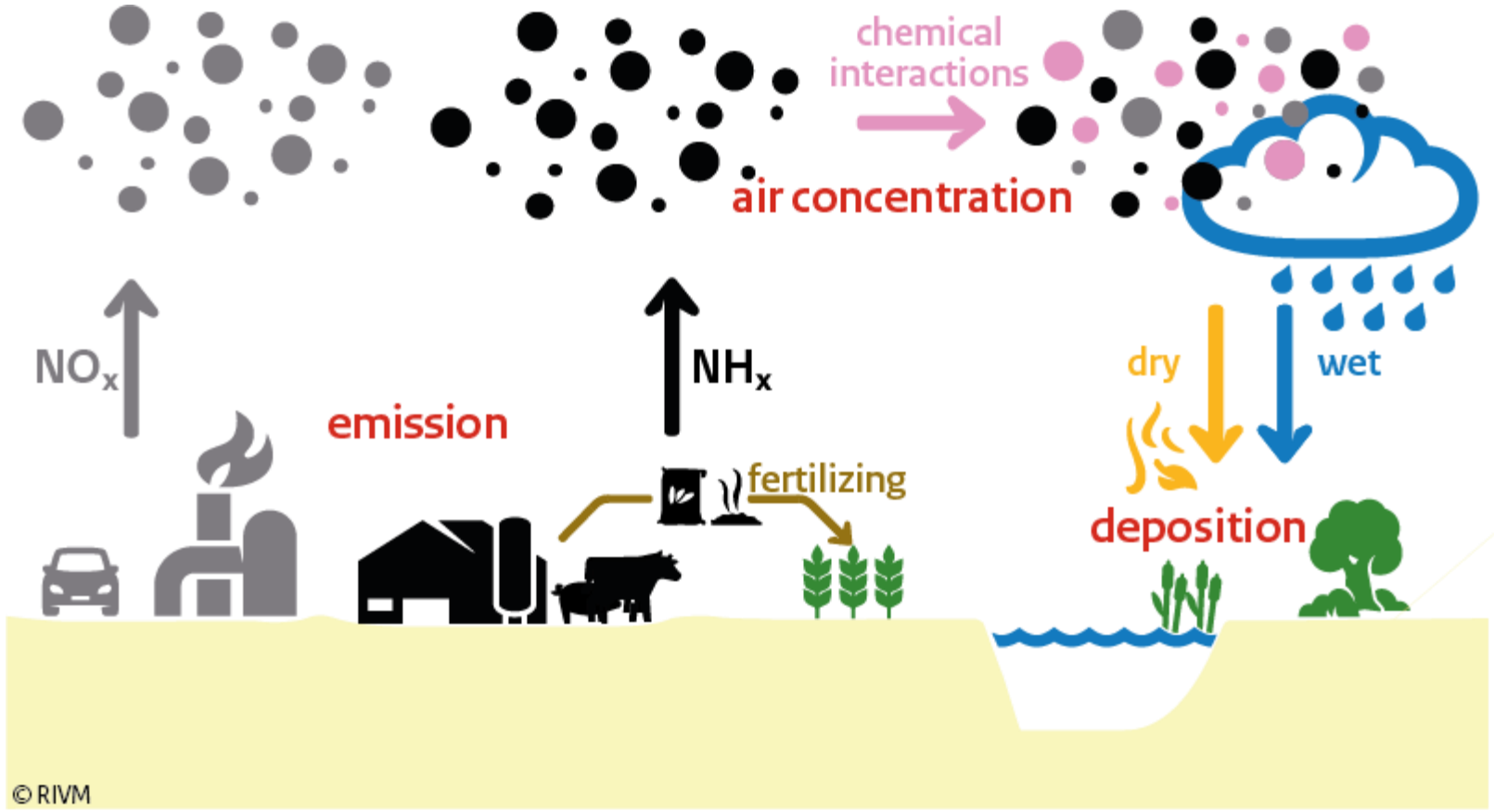
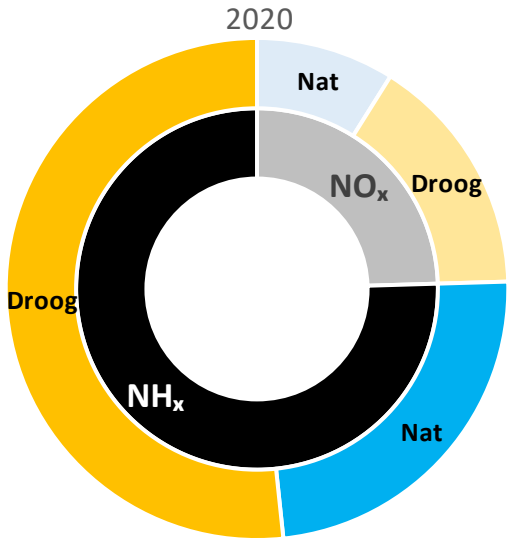
N_r-deposition





Still frequently in the media

Trouw, 2024-09-11

Vermesting

Nieuwe metingen: juist in de bossen komt veel meer stikstof terecht dan we dachten

In bosgebieden daalt in de praktijk meer stikstof neer dan de modellen van het RIVM berekenen. Dat blijkt uit nieuwe metingen van de Wageningse universiteit (WUR).

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redacteur landbouw en stikstof

11 september 2024, 22:00

→ Soil measurements indicate ~50 kg N/ha/yr between 1990 and 2023

Measurement series at Speuld since 1988

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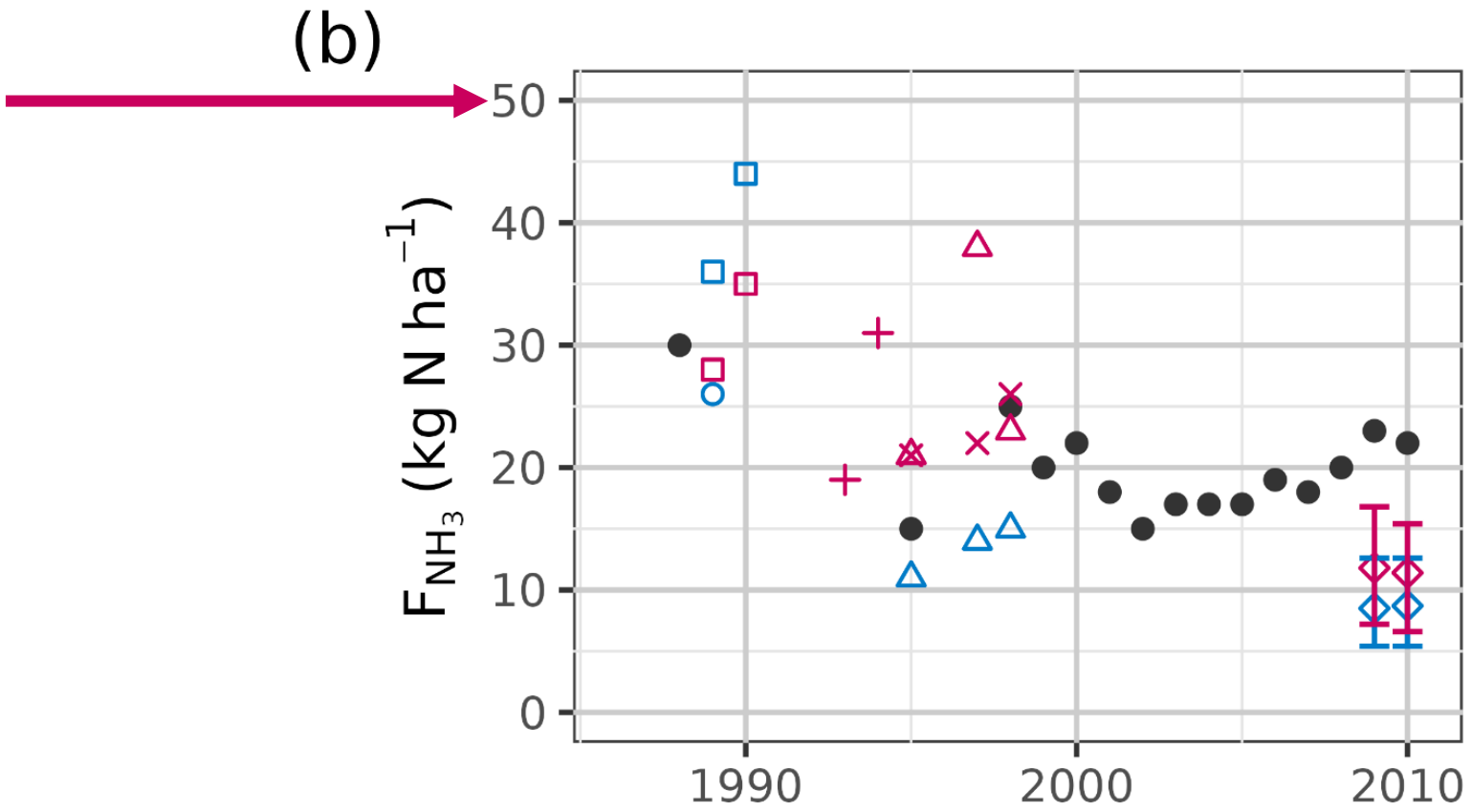
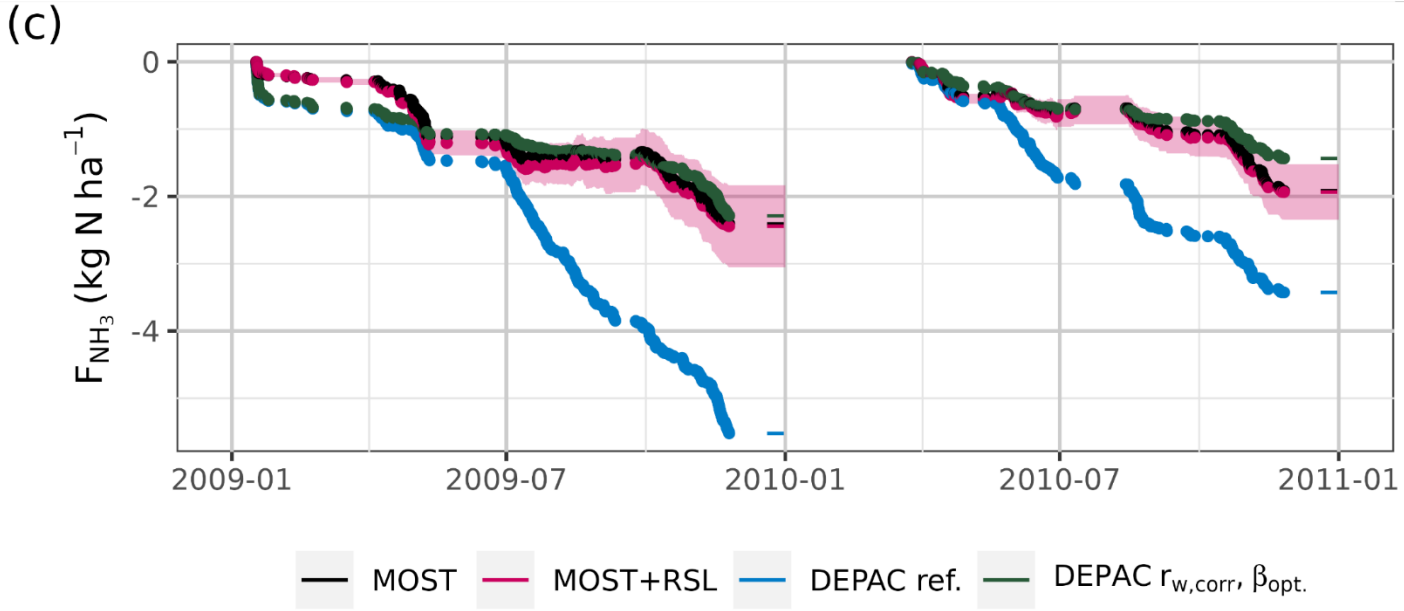
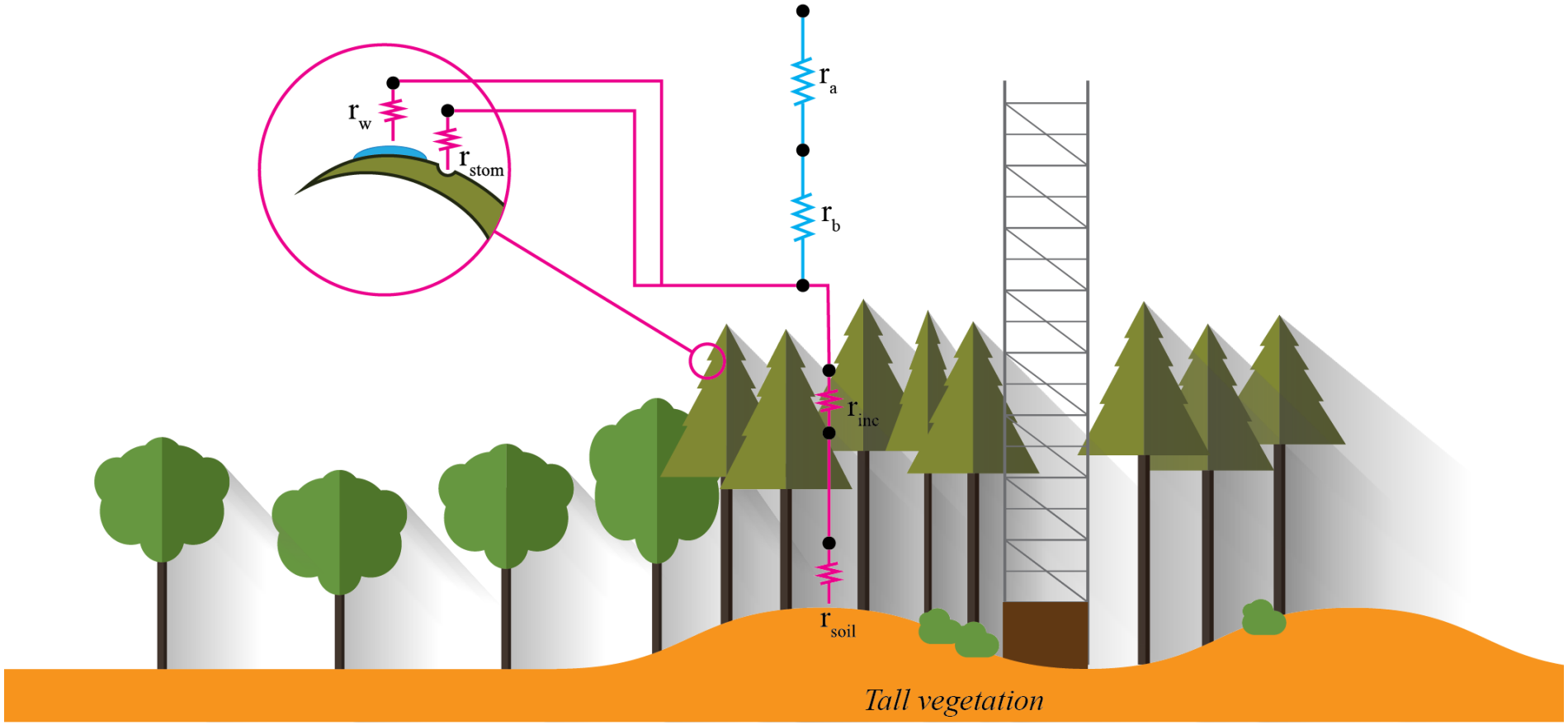


Cumulative flux

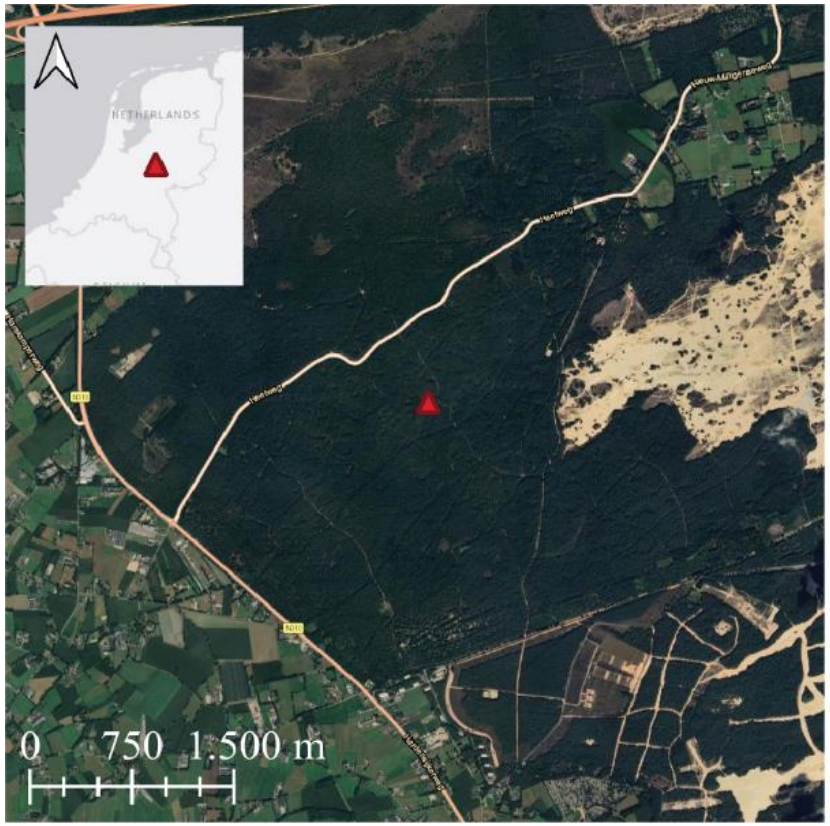


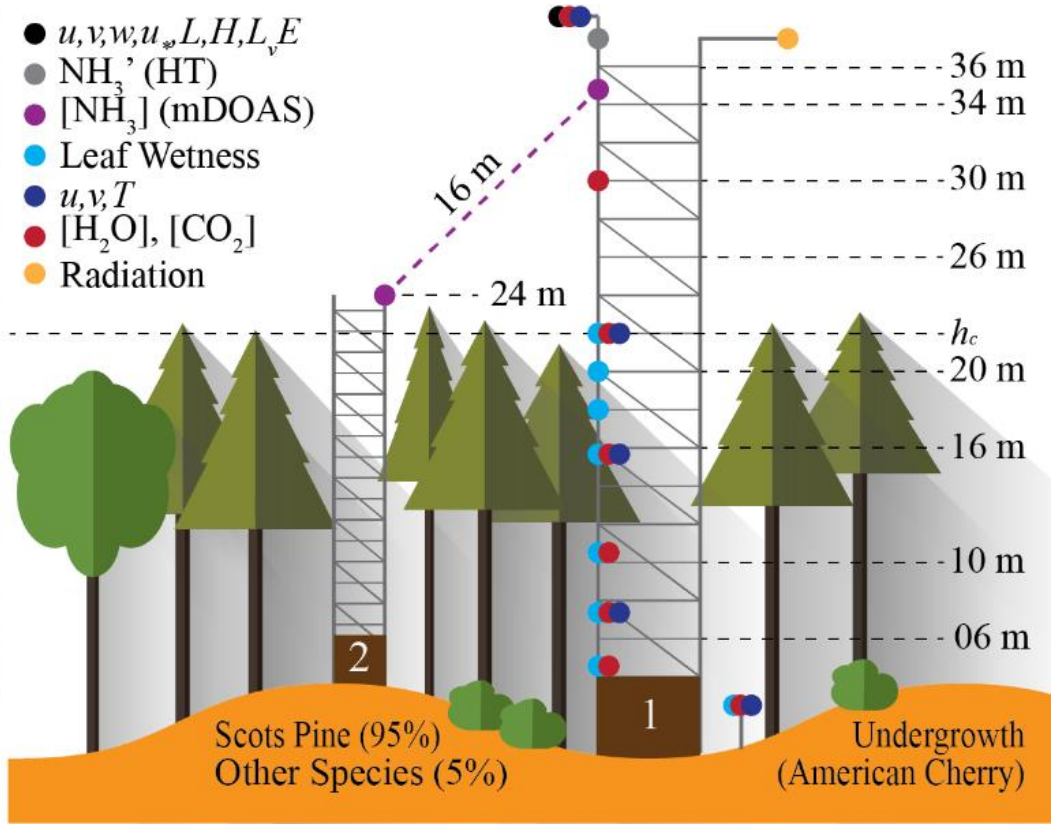
- Large dataset, low data coverage
  - ~35% for concentration
  - <15% for fluxes
- DEPAC overestimates deposition?

NH_3-exchange → The resistance analogy



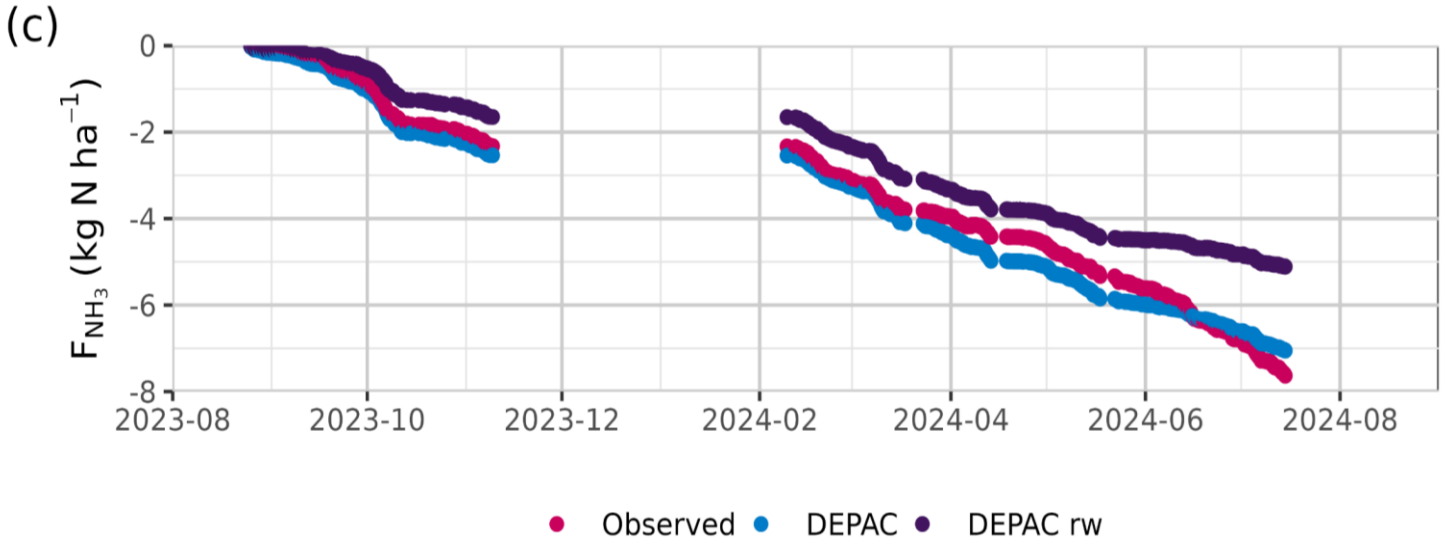
Loobos flux measurements



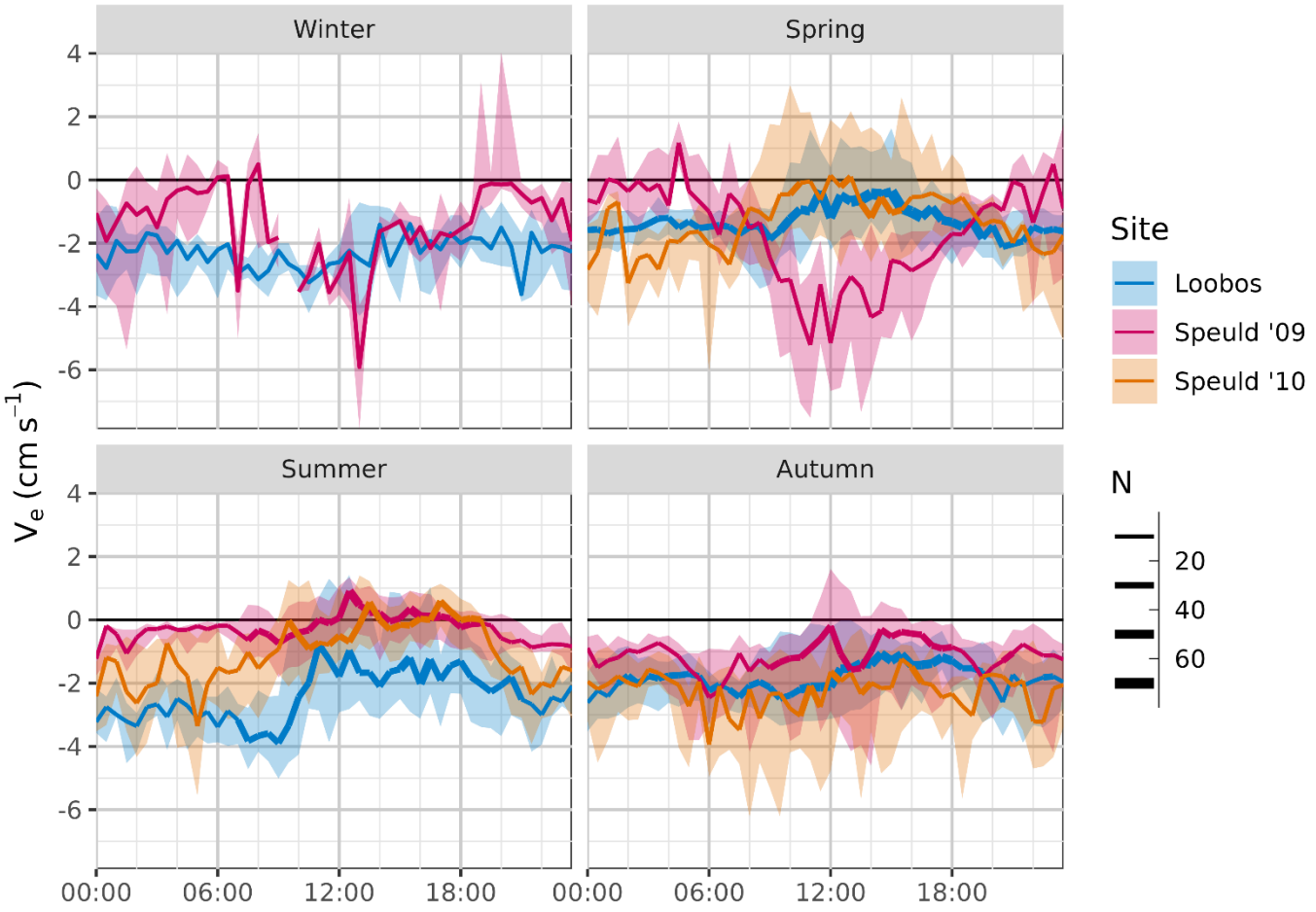


Loobos flux measurements

Cumulative flux



- Preliminary results!
- 1 year dataset, high coverage
  - ~96% for concentration
  - ~45% for fluxes



Speuld and Loobos comparison

- Same order of magnitude and patterns
  - Disagreement in spring
  - More emissions in summer in Speuld

Measurement series at Speuld since 1988

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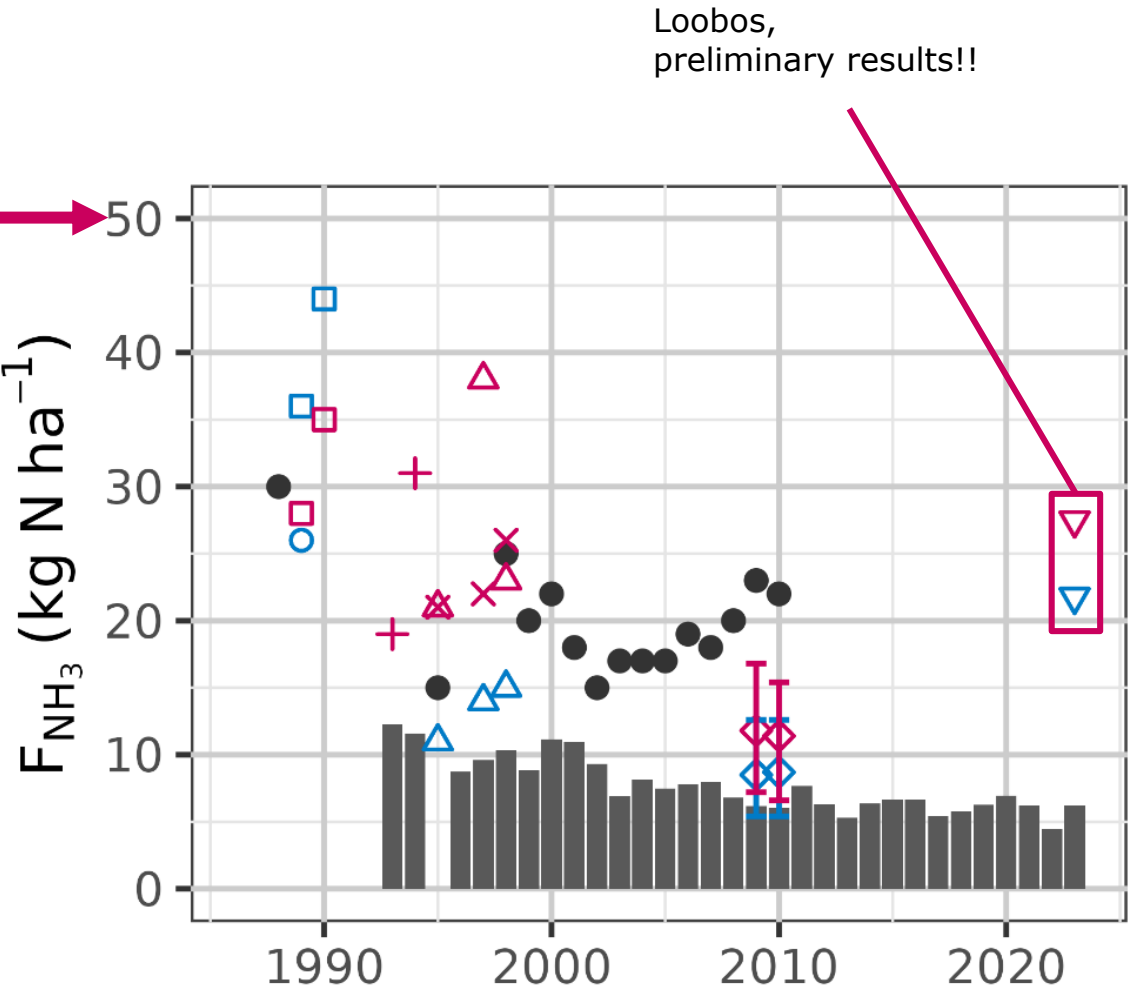

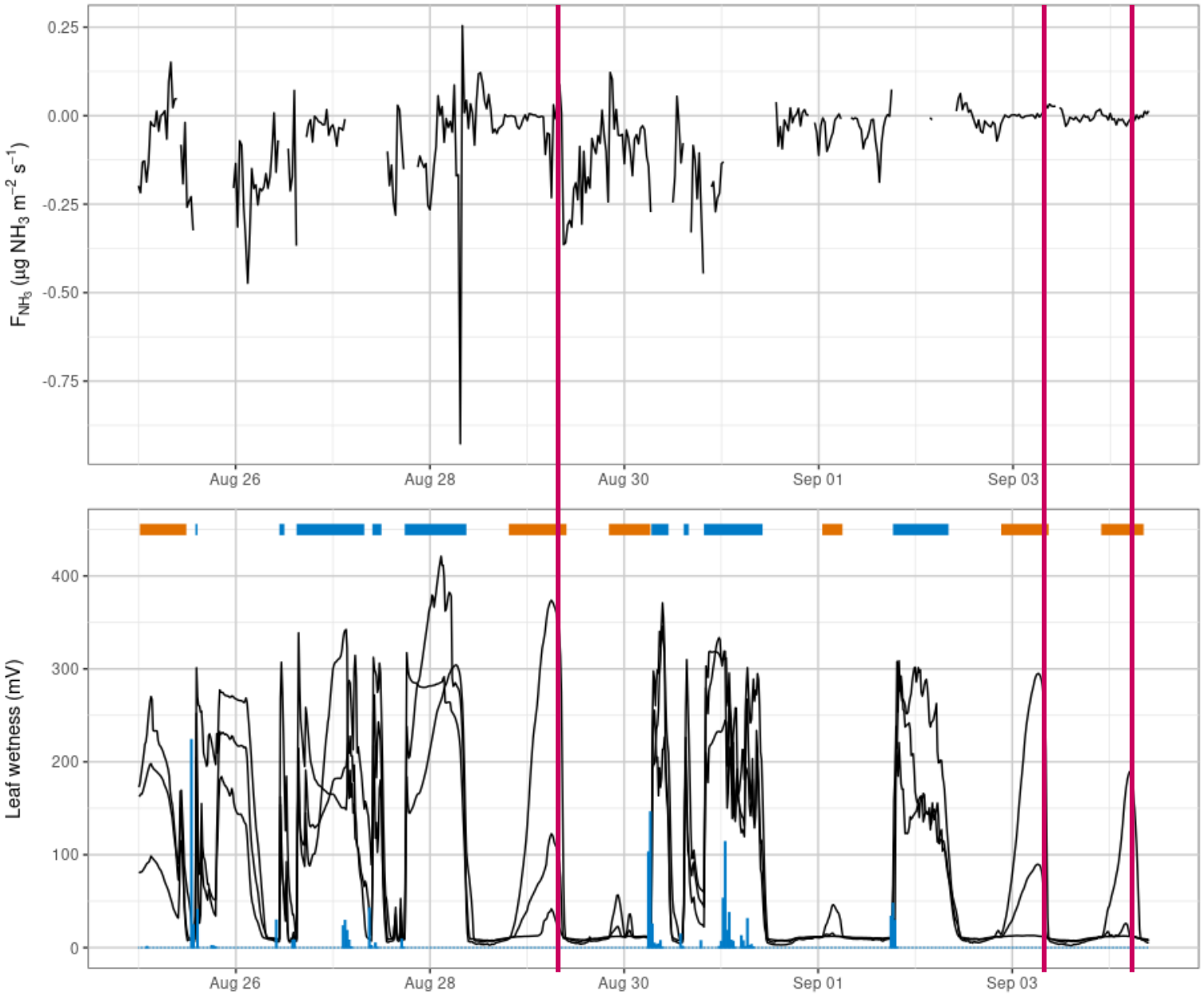

Leaf wetness measurements

- Release of NH_3 after dew events?

Outlook

- Investigate external leaf pathway (r_w)
- Use CO_2 (and H_2O) fluxes to constrain r_{stom}
- What happens below canopy?