Hour-to-hour vegetation water dynamics captured in radar backscatter
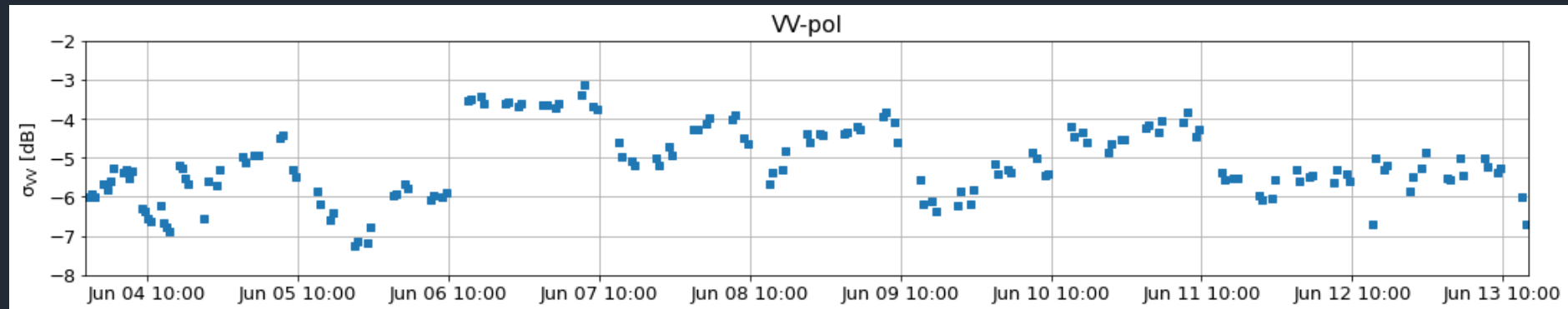
lessons learned from experimental studies

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EGU General Assembly 2022

What controls the sub-daily backscatter behaviour?

We distinguished between 3 moisture 'reservoirs'

Surface canopy water (SCW)
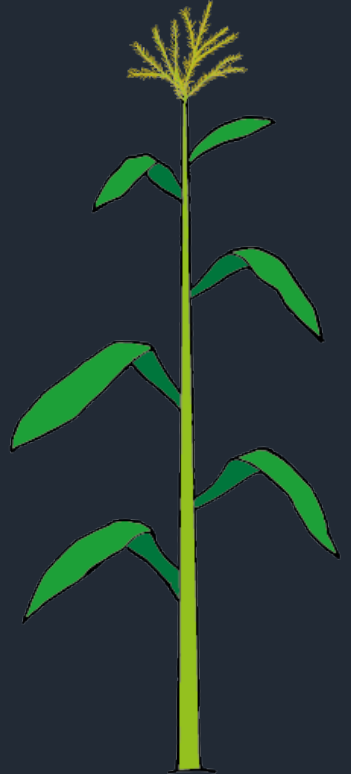
Dew adds 0-10%

Rain adds 0-20%

Vegetation water content (VWC)
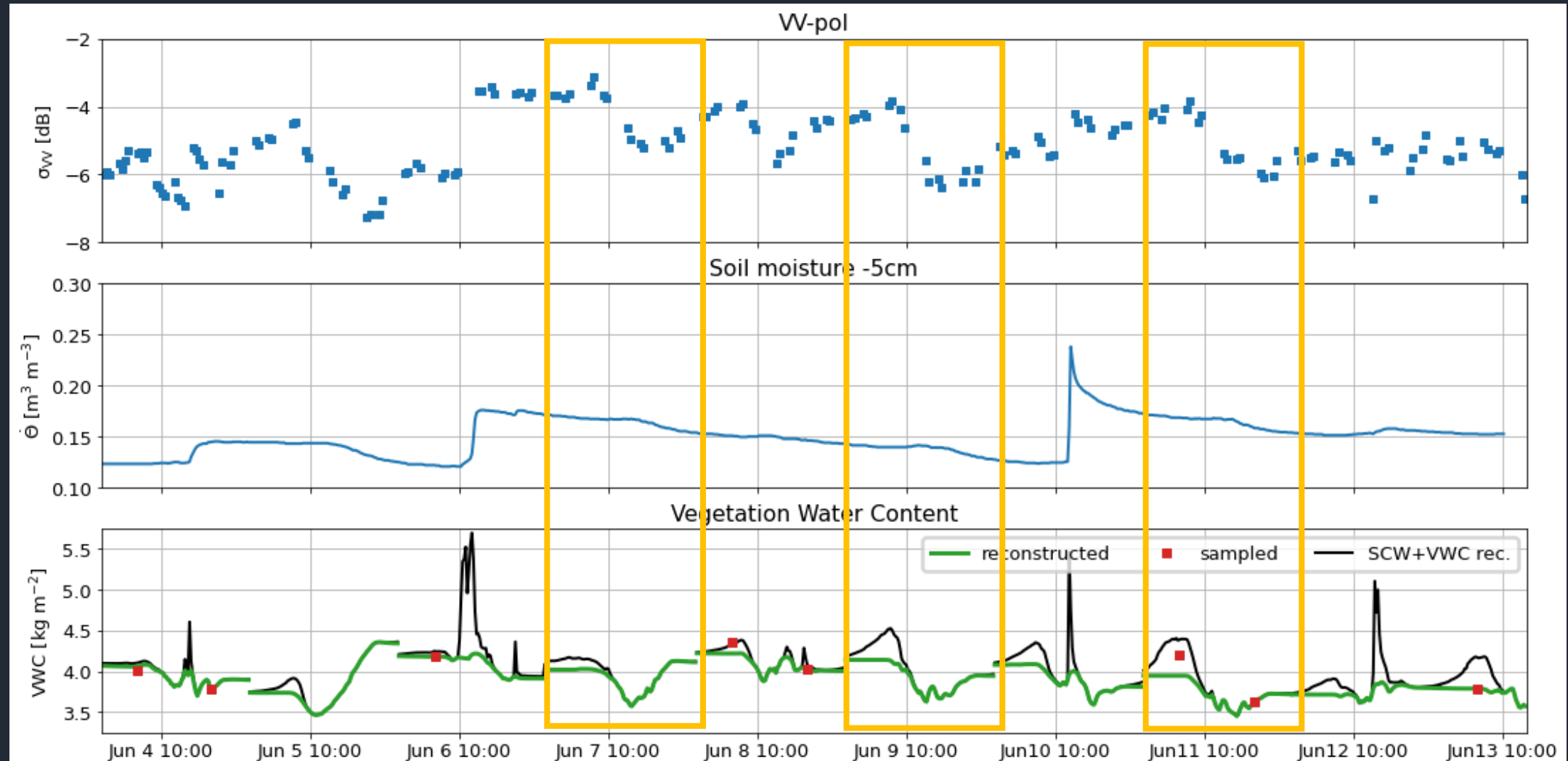
VWC varies with 5-20% (normal)
                 35% (stressed)
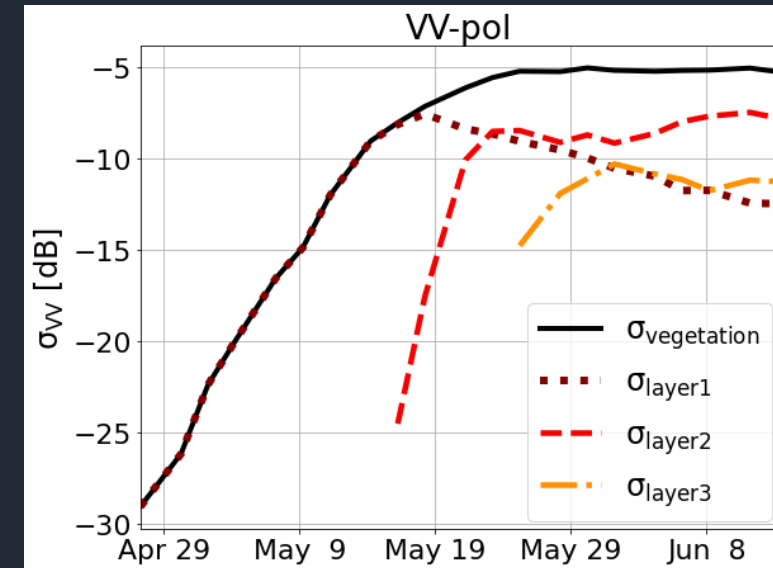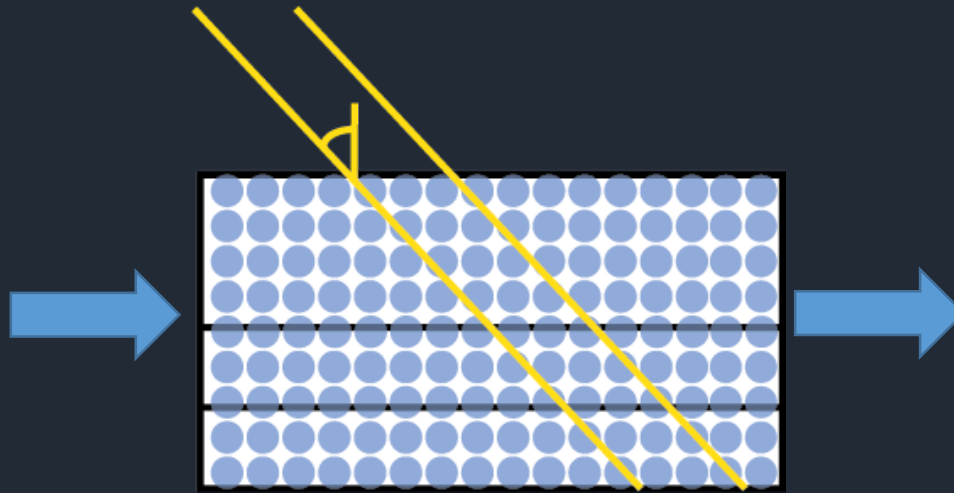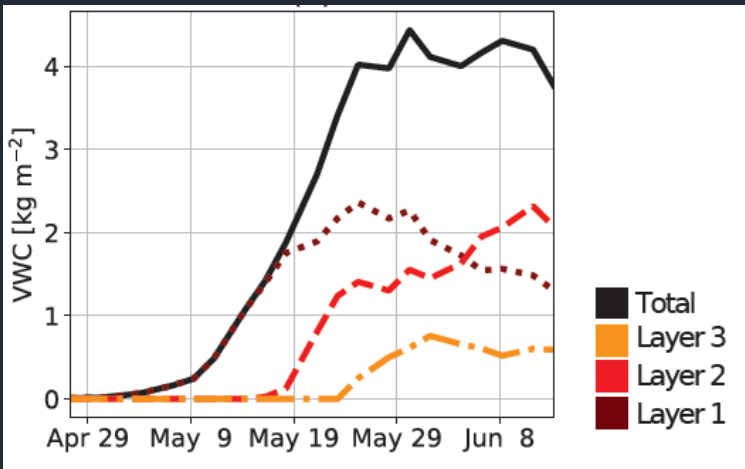
Surface soil moisture (SSM)

Sub-daily variations in backscatter reflect water dynamics in vegetation layer

Which vertical layers control the signal?

3-layer Water Cloud Model

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