

Sensitivity of CRNS and Sentinel-2 Products to detect Soil Water content along a toposequence with two contrasting parent materials

TOPIC

REMOTE SENSING



MOISTURE INDEX

Resolution 20-50 m, surface data

Normalized Difference Water Index

$$NDWI = (NIR - SWIR) / (NIR + SWIR)$$

$$NDWI = (B8A - B11) / (B8A + B11)$$

NIR _ Near infrared band | B8A

SWIR _ Short-Wave Infrared band | B11

Range (-1/1) low / high moisture level | SNAP

COSMIC RAY NEUTRON SENSOR

SOIL WATER CONTENT

Resolution 150 m radius, Top 30 cm

Non-invasive, passive, mobile

Detects number neutrons above soil

FIELD SENSORS

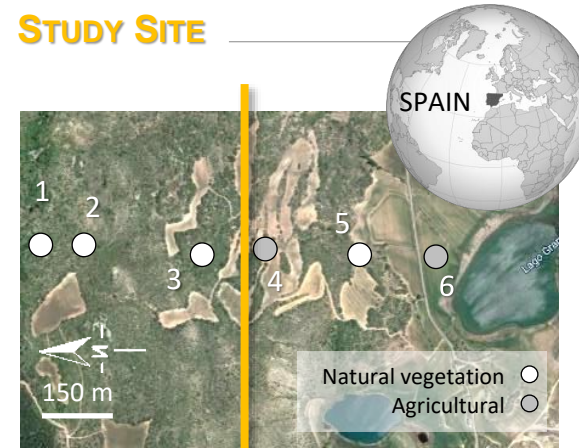
SOIL MOISTURE

Resolution data point, Top 5 cm

Reliable, stable and accurate

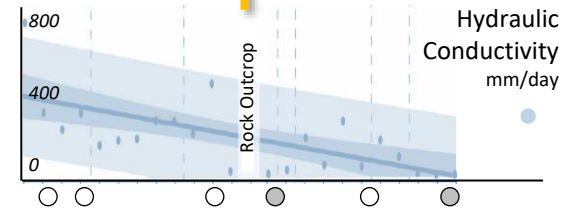
Invasive, Cost effective

STUDY SITE

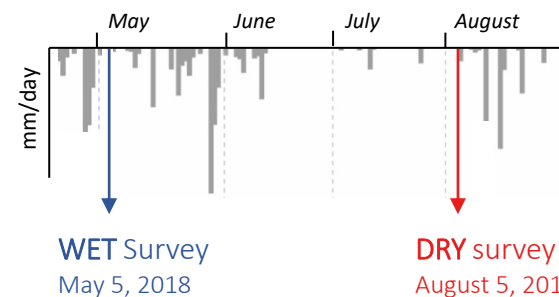


Upper Section
Limestones soils
Muschelkalk facies

Lower Section
Siliciclastic soils
Keuper facies

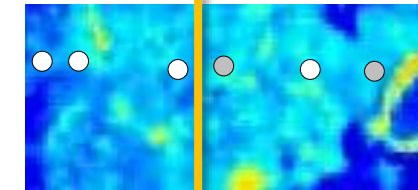


2 surveys: Wet and Dry
Daily Precipitation

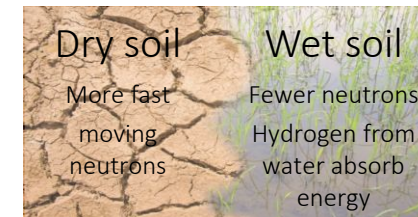
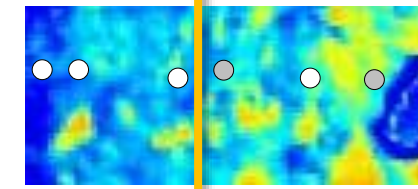


RESULTS

WET Survey



DRY survey



Upper Section Lower Section

