

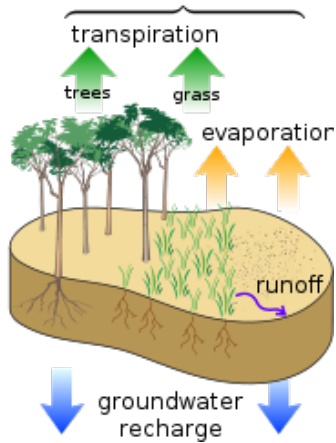
Growing season of whiter wheat and recharge to ground water

143TPVZ: Transportní procesy

Jakub Jeřábek

March 24, 2023

evapotranspiration =
transpiration + evaporation

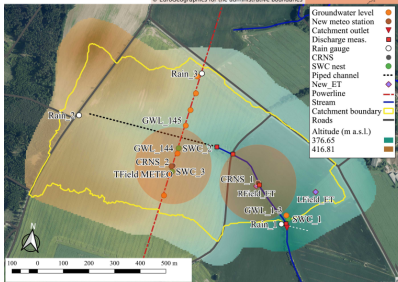
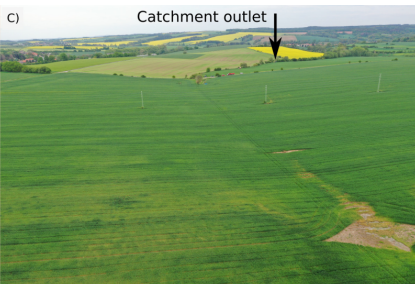
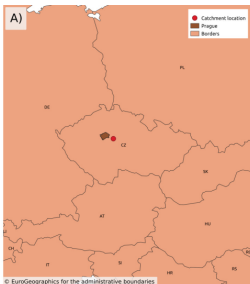


wikipedia.org

1. Nučice catchment

Nučice catchment

- A) location of the catchment
- B) catchment overview
- C) view from the upper part of the catchment
- D) view from the lower part of the catchment



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- Figure 1 consists of four panels (A, B, C, D) illustrating the study area. Panel A shows the location of the catchment in the north of the Iberian Peninsula. Panel B shows a catchment overview with a legend for catchment outlet, discharge area, DMS, catchment area, and various land use types. Panel C shows a view from the upper part of the catchment. Panel D shows a view from the lower part of the catchment. The map includes a scale bar and a north arrow.

Nučice catchment



Nučice catchment

2019-02-14



2016-09-16



Nučice catchment

CRNS - cosmic ray neutron sensor



SWCNET - network of the soil water content probes



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Data for the practical

Precipitation

Amount of water which falls
on the land surface.

Measured with rain gauge.



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Precipitation

Amount of water which falls on the land surface.

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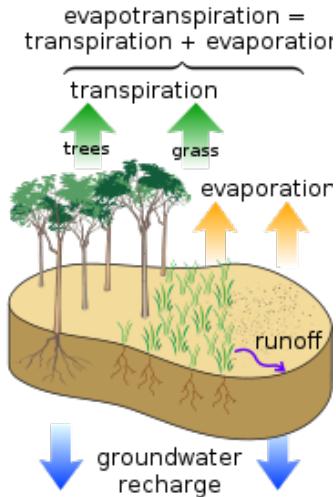
Data for the practical

Evapotranpiration

Based on calculation - obtained indirectly. (FAO methodology). Data calculated for a reference crop.



3. Evapotranspiration



**Evapotranspiration ET =
Evaporation E + Transpiration T**

ET partitioning based on canopy
cover CC derived from NDVI.

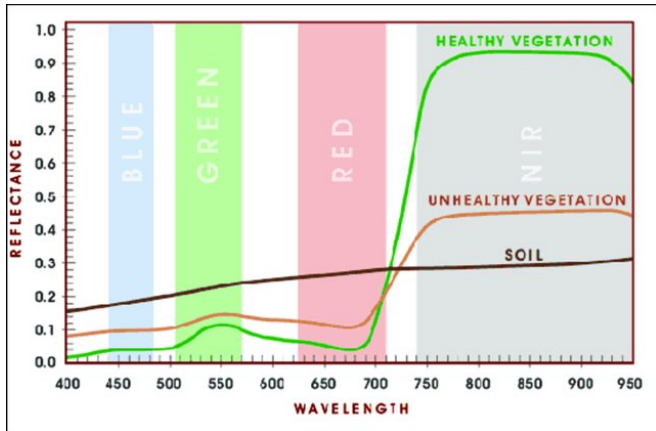
CC derived from NDVI based on eq.
 $CC(\%) = 97.368(NDVI) - 4.492$
(Meta-analysis provided by Tomas
Tenreiro, CSIC - Institute for
Sustainable Agriculture, Spain)

3. Evapotranspiration

NDVI - Normalized difference vegetation index

$$NDVI = \frac{NIR - Red}{NIR + Red}$$

NIR — near-infrared



source: Using Field Scouting or Remote Sensing Technique to Assess Soybean Yield Limiting Factors

NDVI - Normalized difference vegetation index

$$NDVI = \frac{NIR - Red}{NIR + Red}$$

NIR — near-infrared

"The normalized difference vegetation index (NDVI) is a simple graphical indicator that can be used to analyze remote sensing measurements, often from a space platform, assessing whether or not the target being observed contains live green vegetation." wikipedia.org

NDVI data obtained with sentinel hub
(<https://apps.sentinel-hub.com/eo-browser/>)

3. Evapotranspiration



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3. Evapotranspiration



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NDVI data obtained with sentinel hub

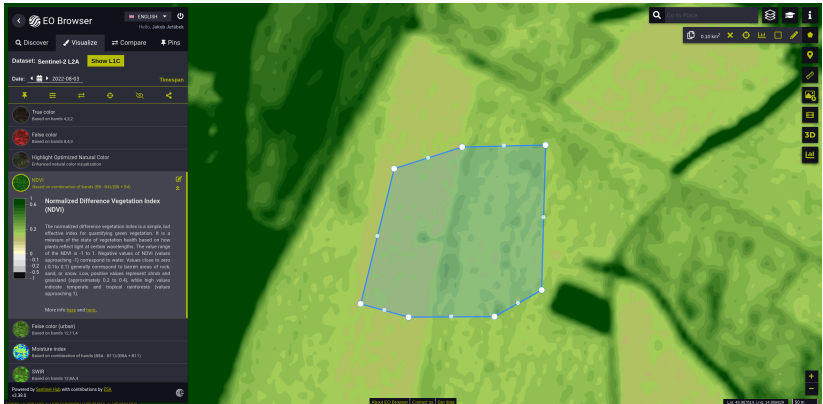
3. Evapotranspiration



NDVI data obtained with sentinel hub

(<https://apps.sentinel-hub.com/eo-browser/>)

3. Evapotranspiration



NDVI data obtained with sentinel hub

(<https://apps.sentinel-hub.com/eo-browser/>)

3. Evapotranspiration

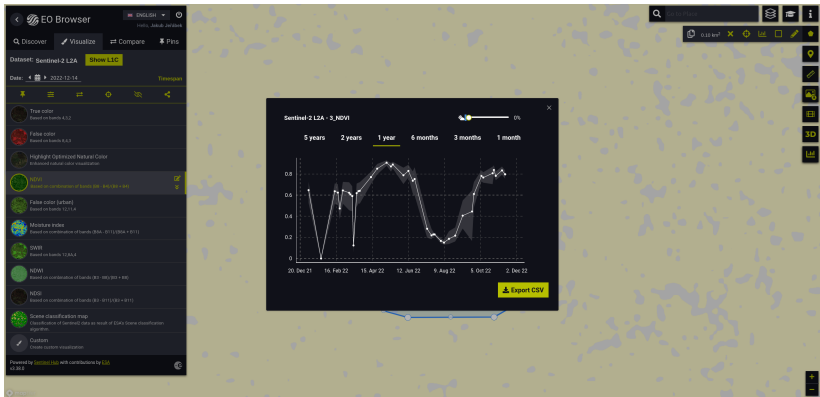


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NDVI data obtained with sentinel hub

3. Evapotranspiration



NDVI data obtained with sentinel hub

(<https://apps.sentinel-hub.com/eo-browser/>)

3. Evapotranspiration



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NDVI data obtained with sentinel hub

3. Evapotranspiration



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NDVI data obtained with sentinel hub

4. Volumetric water content



4. Volumetric water content

