



Task 2.2. characterization of spatial heterogeneities (leader: CESBIO)

UNICA

**Dipartimento di Ingegneria Civile , Ambientale e Architettura
Università di Cagliari, Italy**

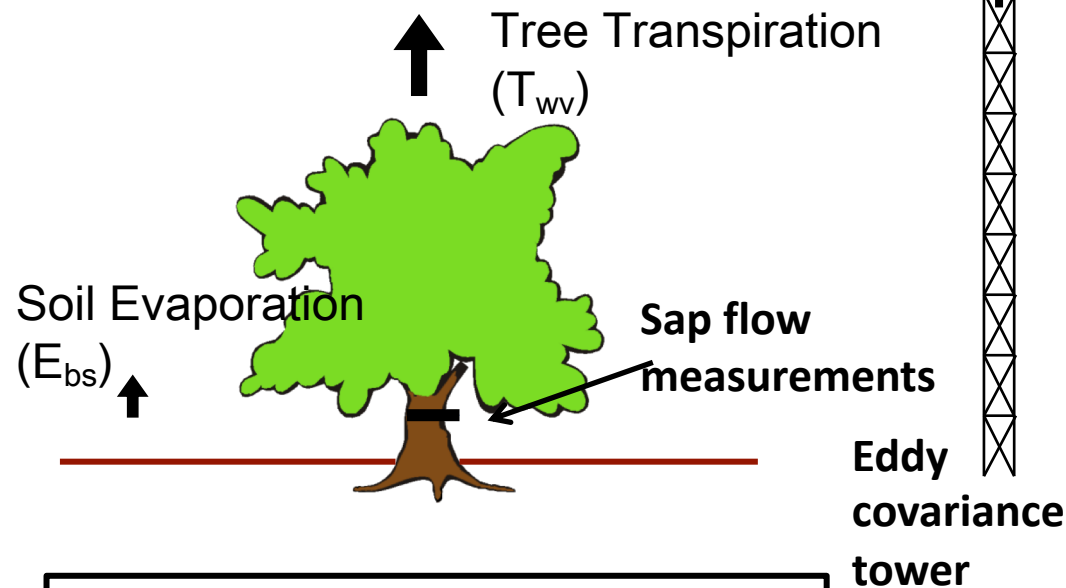
PI: *Nicola Montaldo*

Giulio Vignoli, Roberto Corona, Serena Sirigu, Alessandro Seoni, Antonio Mascia, Andrea Saba





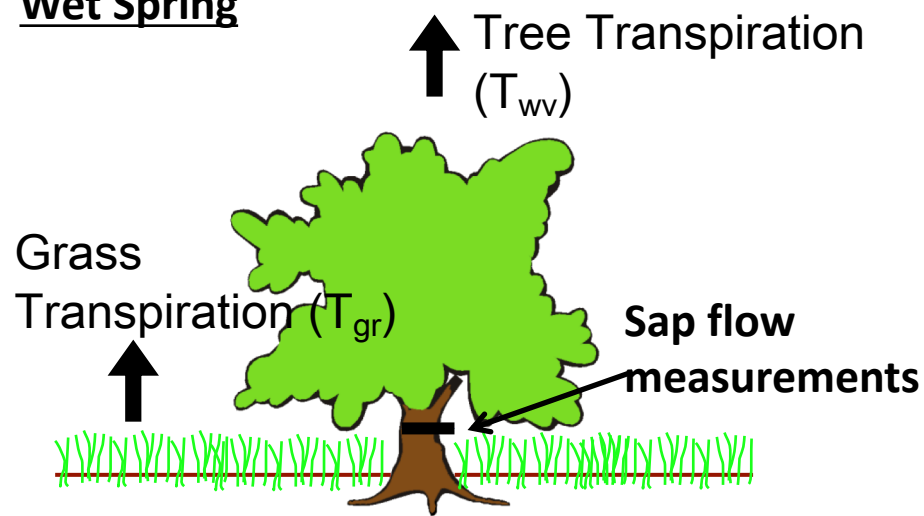
Dry Summer



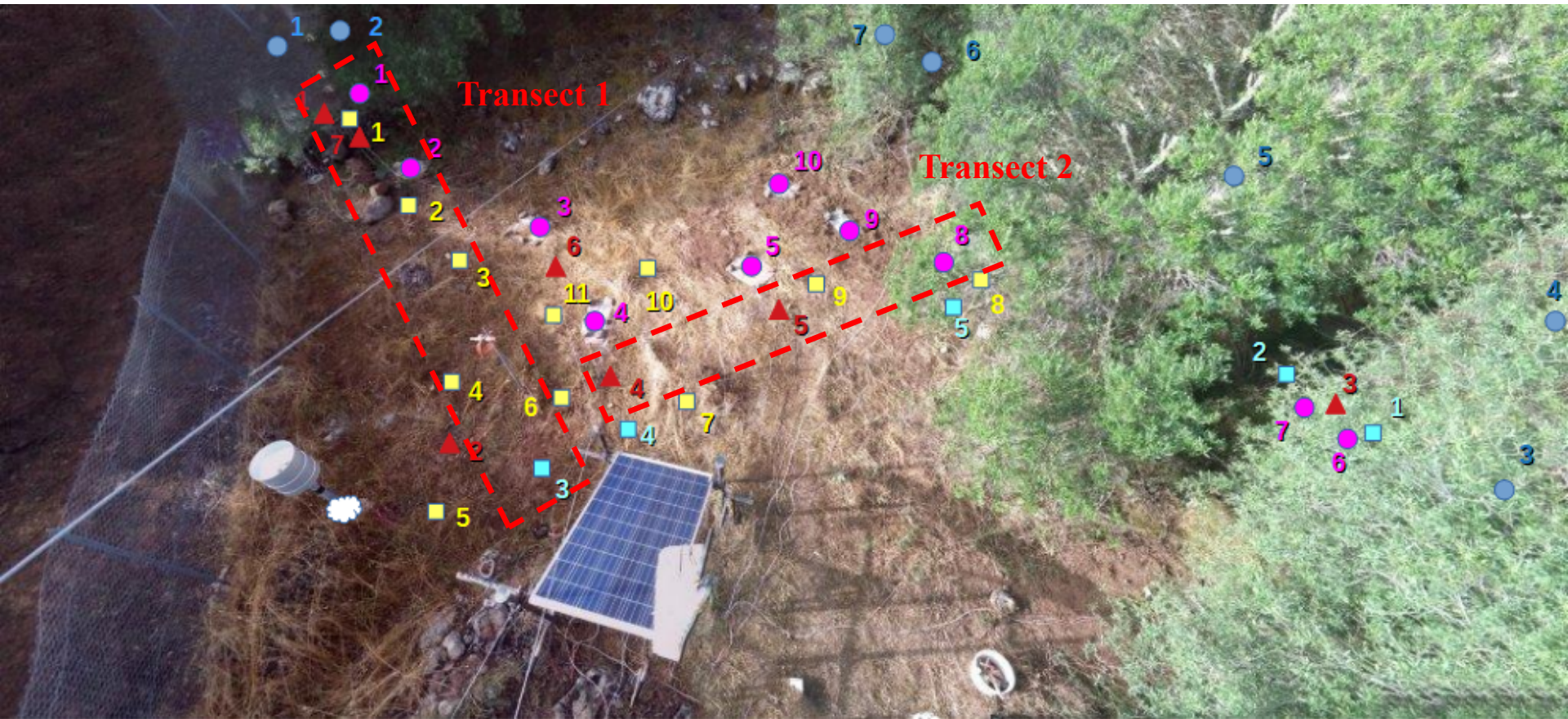
$$ET = E_{bs} f_{bs} + T_{wv} f_{wv} + T_{gr} f_{gr}$$



Wet Spring

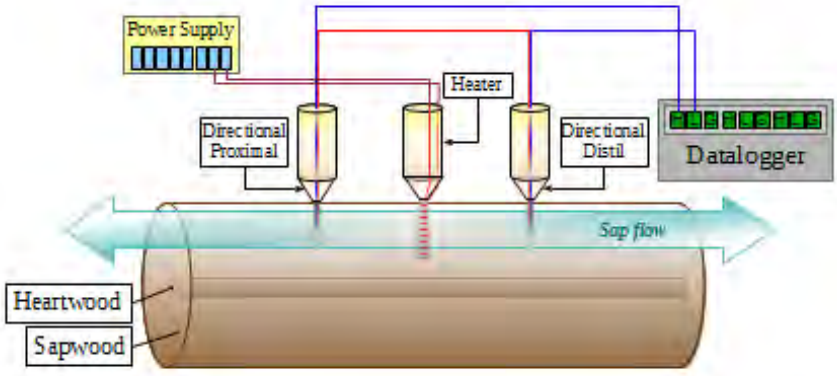


INSTRUMENTS AT ORROLI SITE FROM 2018

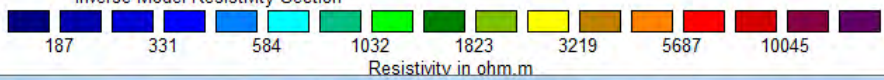
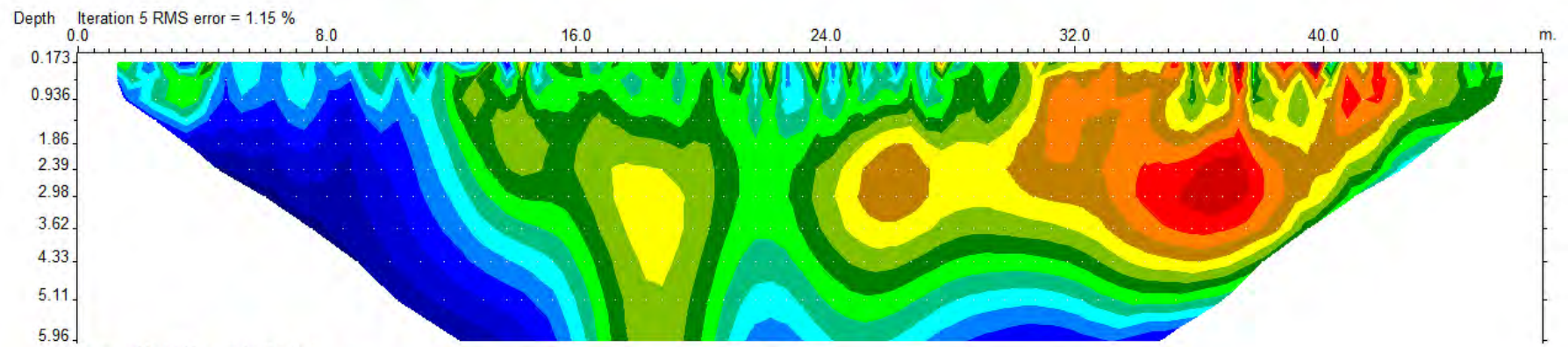
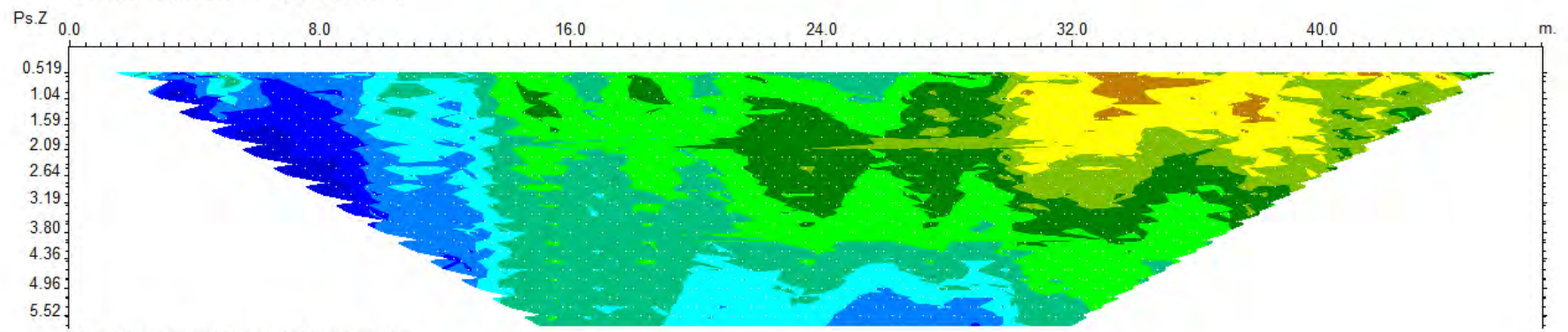
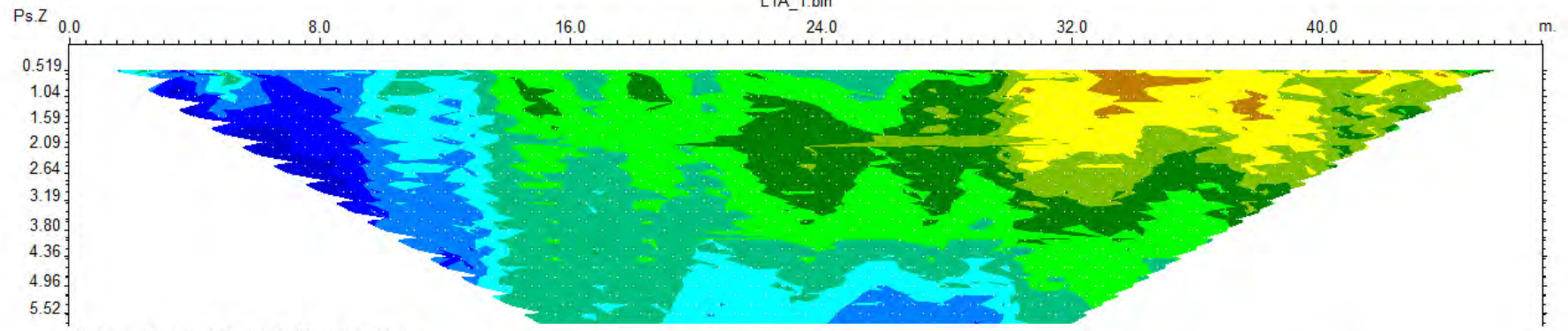


- Stem Sap
- Root Sap
- CS615
- CS616
- ▲ MPS2

Root sapflow probes (Granier, 1985)



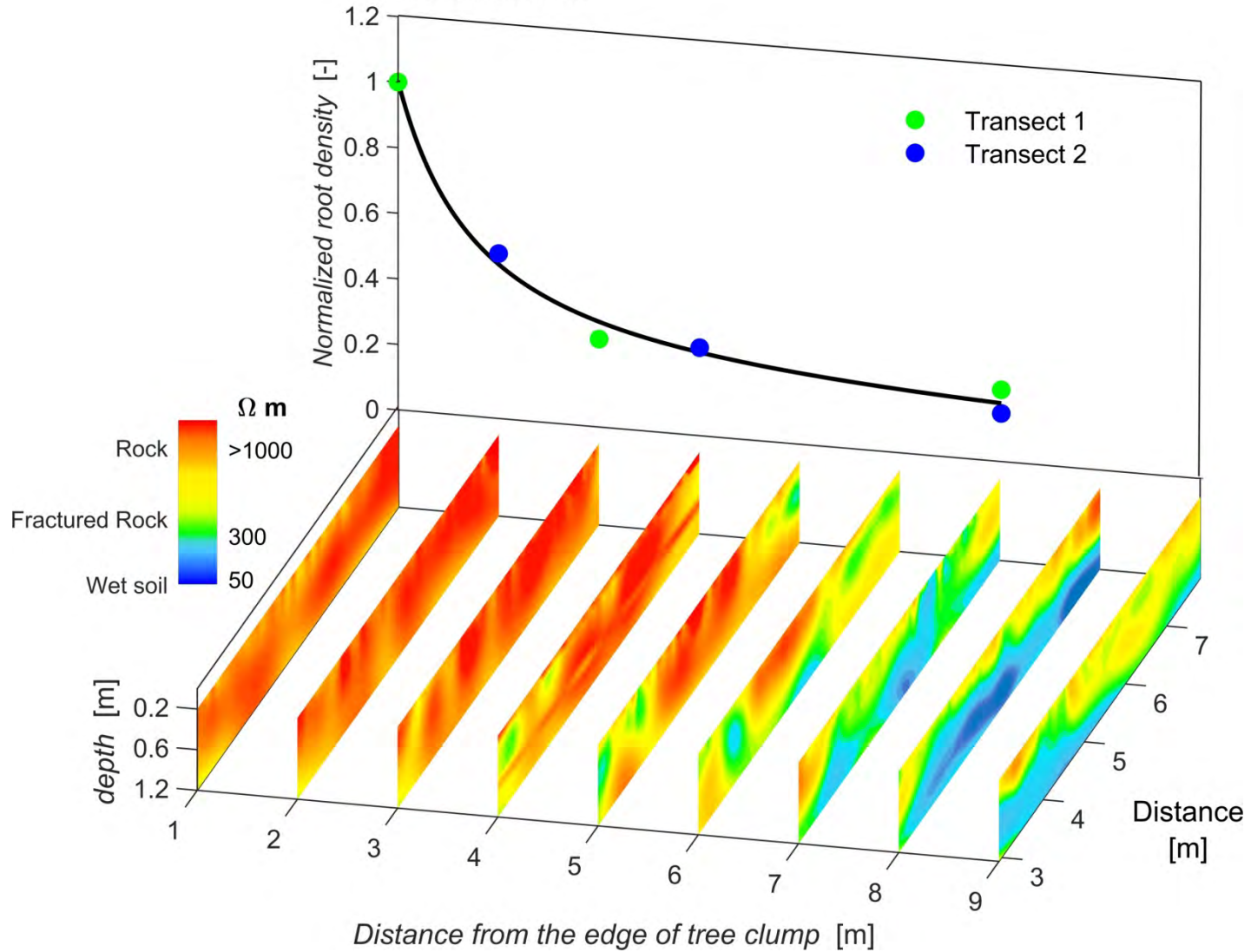
L1A_1.bin



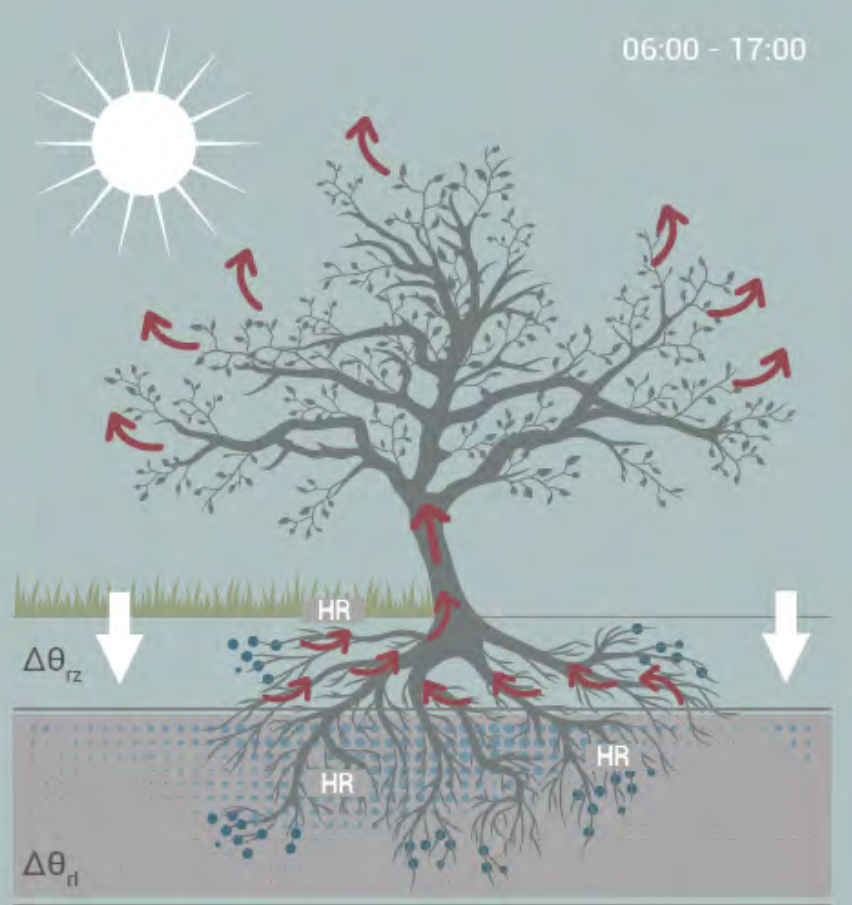
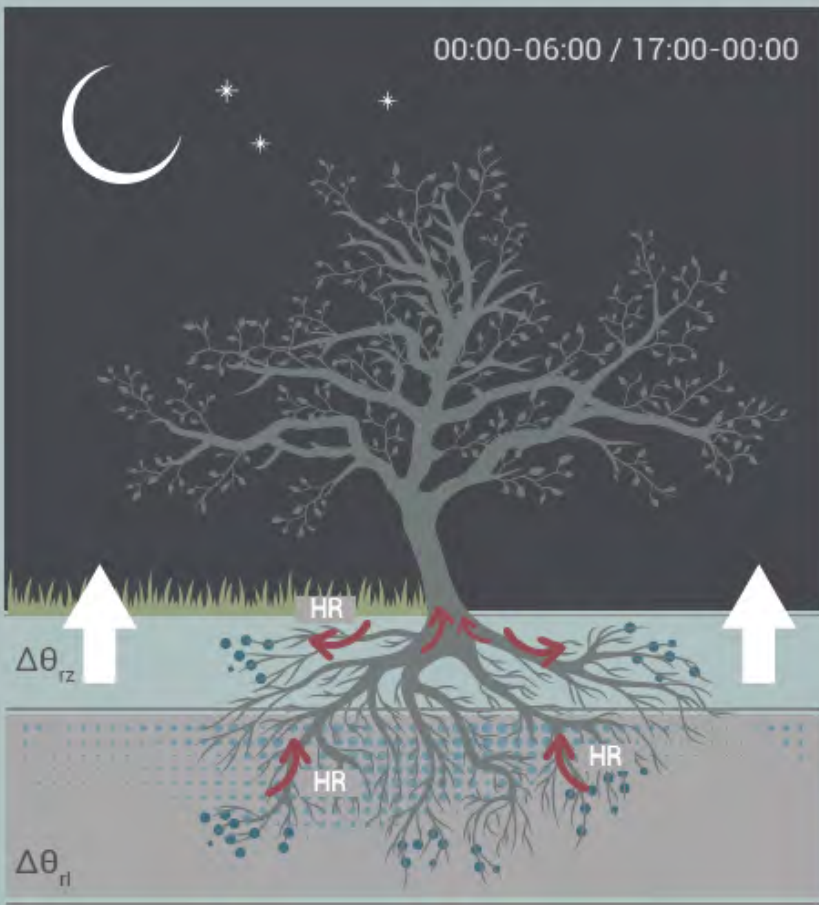
Unit electrode spacing 0.500 m

Normalized density of transport roots along 7 m distance from the edge of two tree clumps

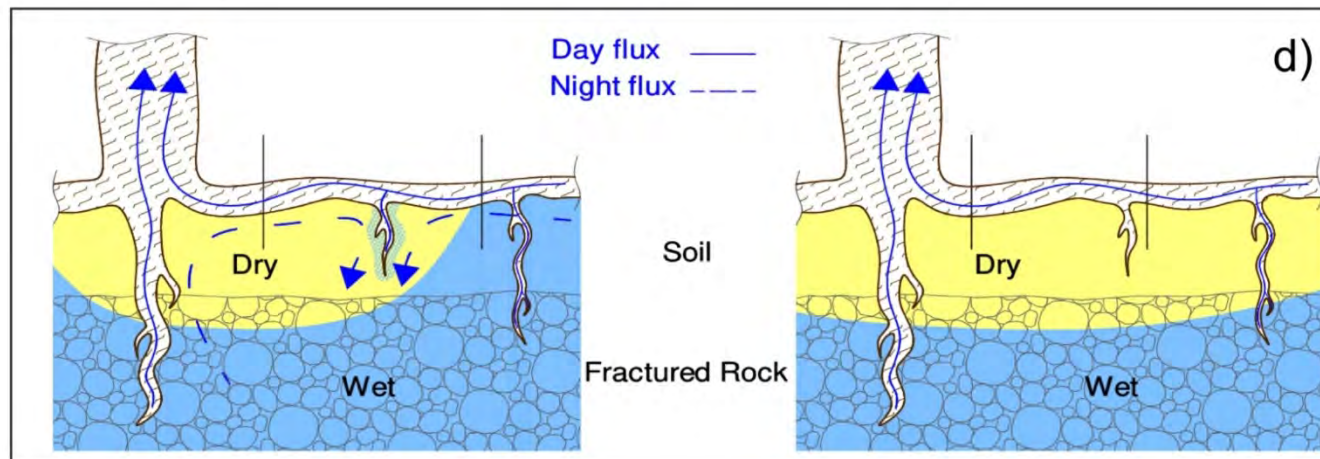
Orroli, Sardinia



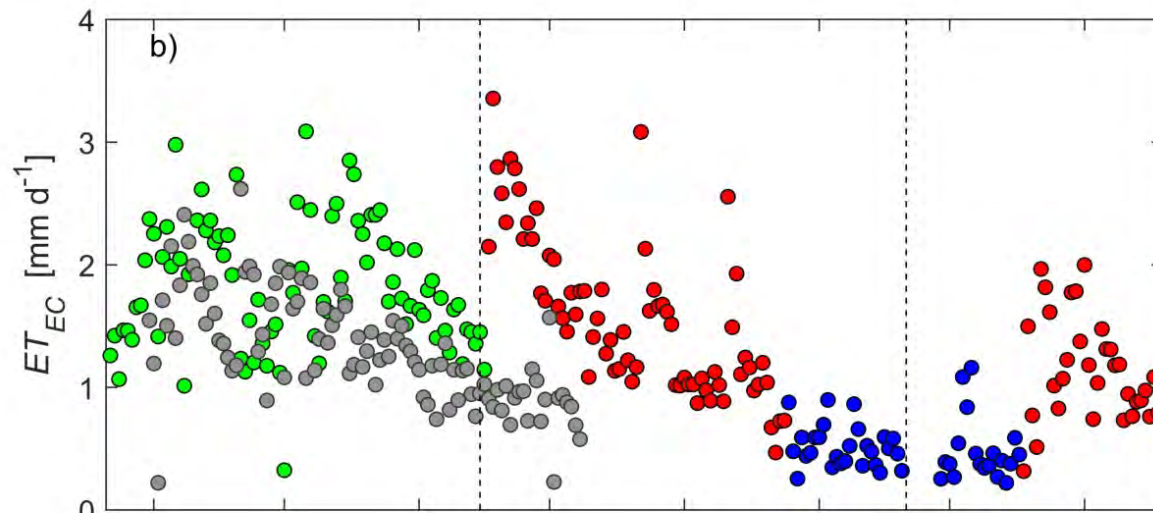
**inverse model electrical resistivity (in Ohm m)
tomography (ERT) images**



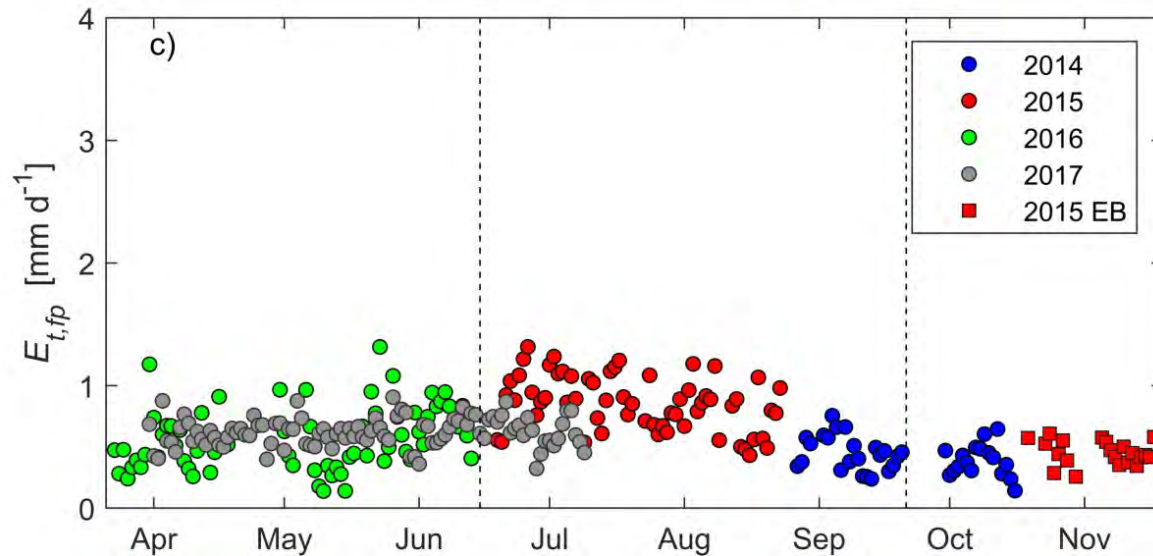
Hydraulic redistribution



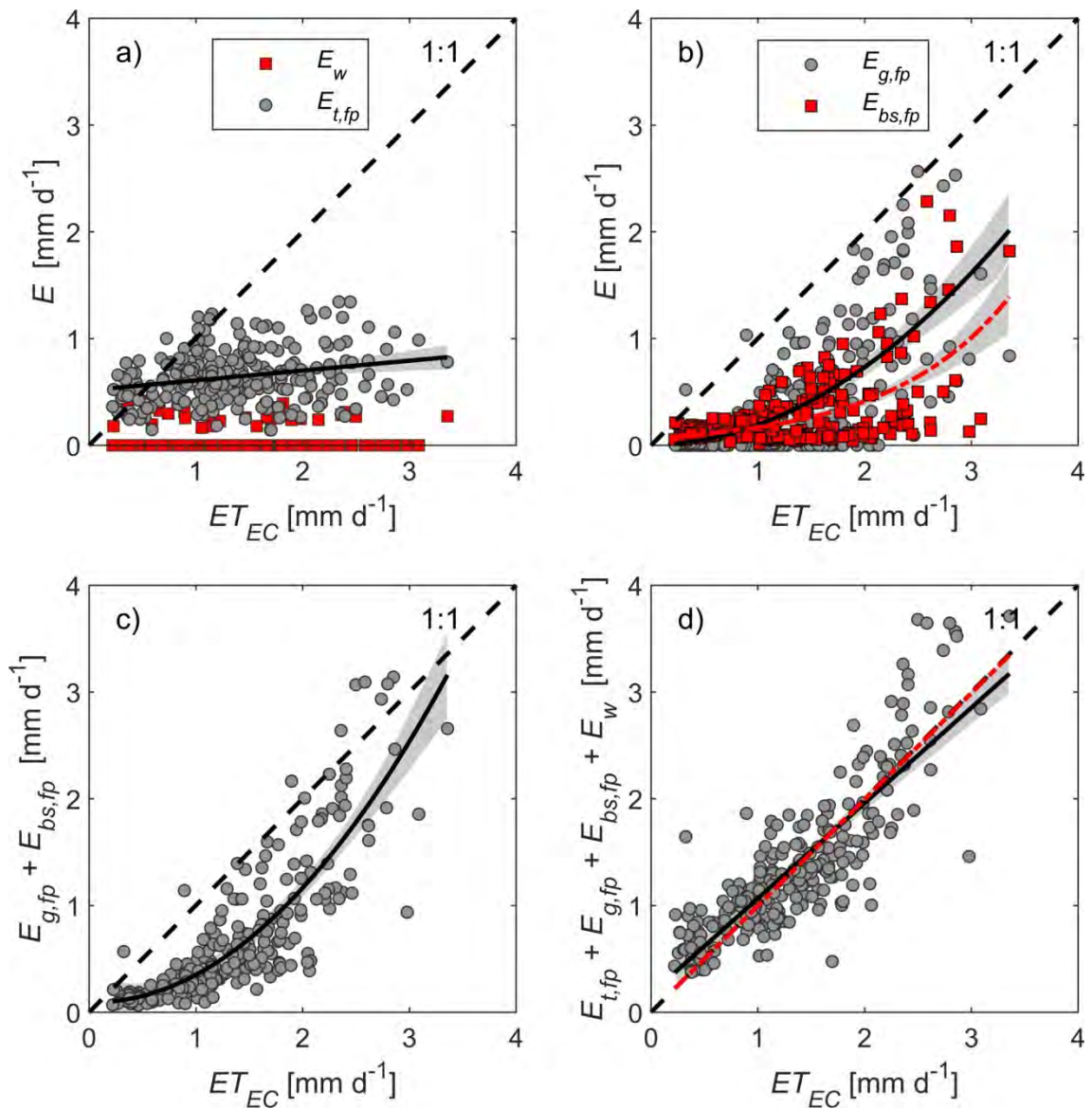
Eddy covariance
evapotranspiration



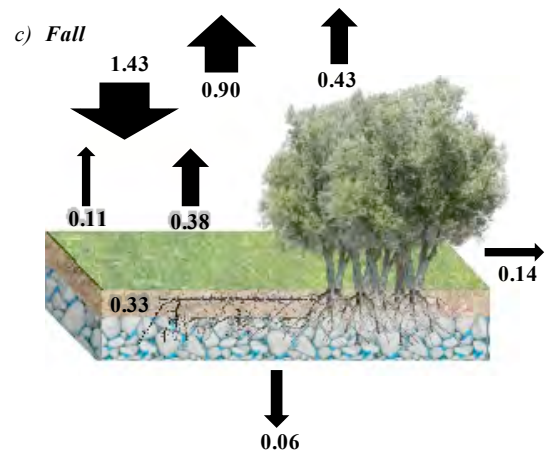
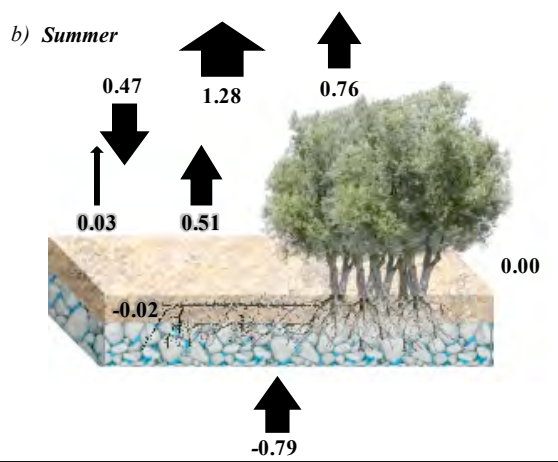
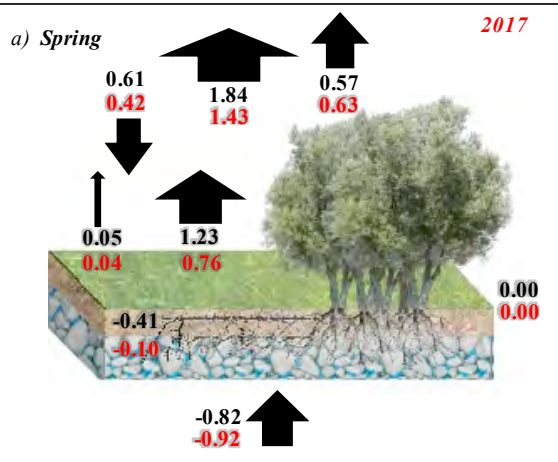
Sap flow
transpiration



Evapotranspiration components



Montaldo et al. (Agricultural and Forest meteorology, 2020)



Evapotranspiration and soil water balance components

