Modelling and measuring evapotranspiration using different approaches in mountain regions

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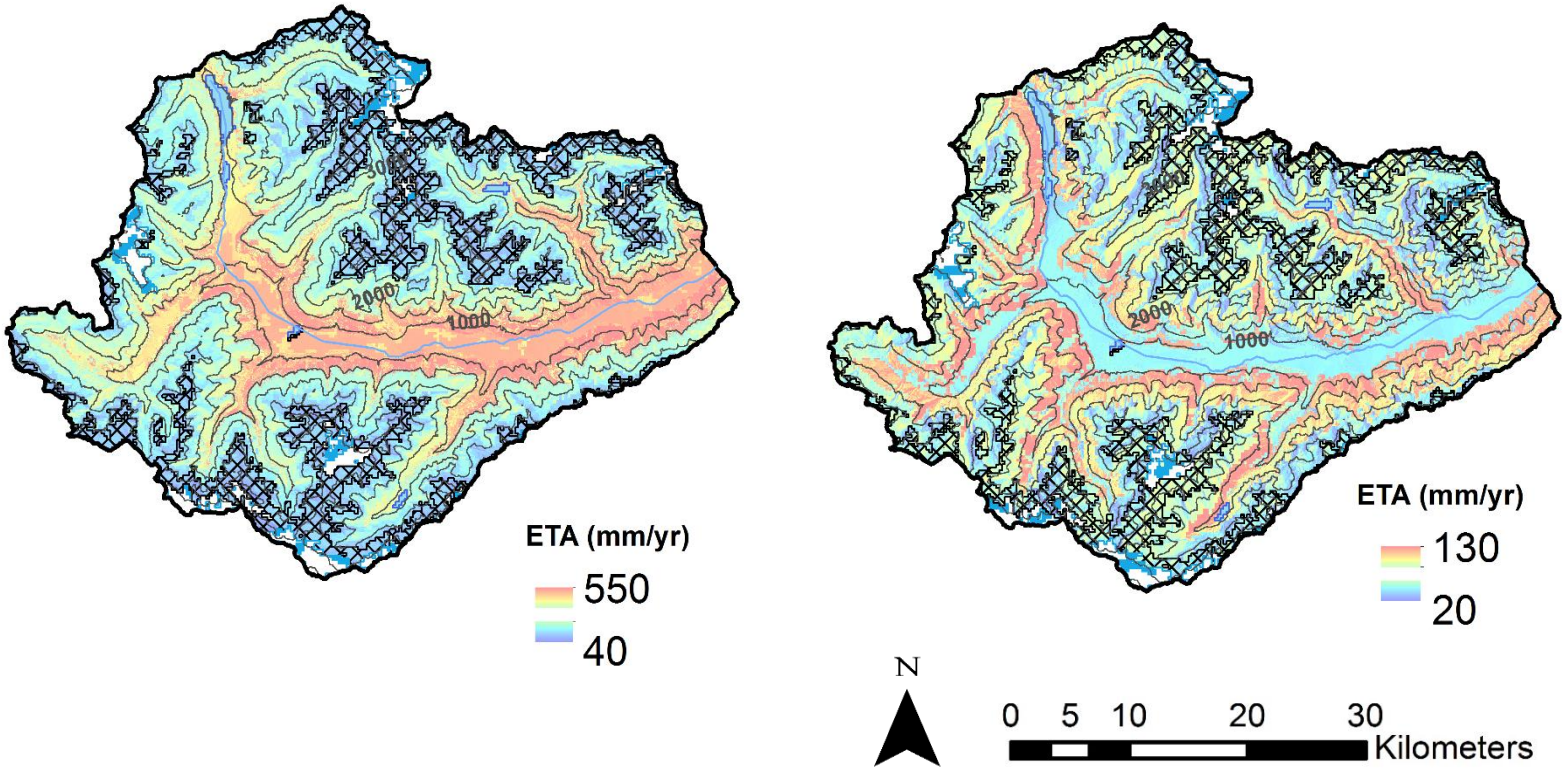
10 September 2019

Evapotranspiration is a key component of the water budget

Climate Change Impact in the Venosta Valley (IT) – Actual Evapotranspiration

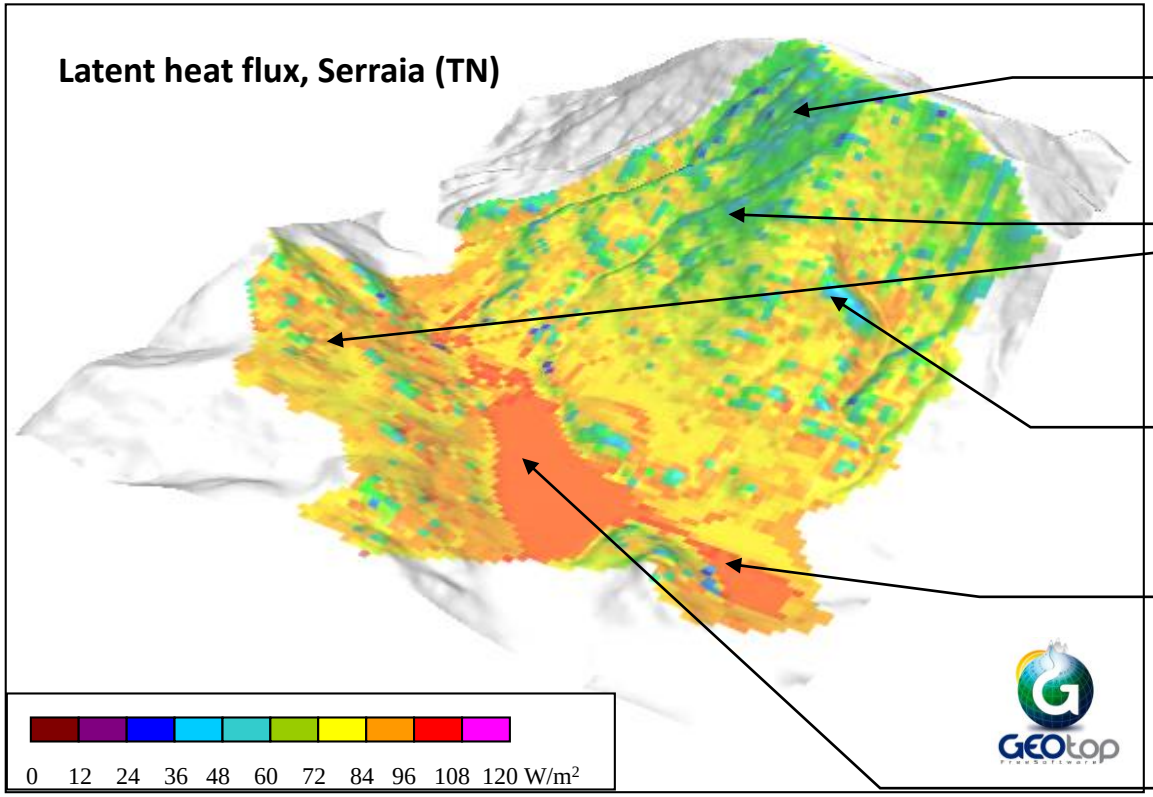
Baseline Simulation | Δabs (scen2100-ctrl)



Brenner et al., 2014 HydroAlp project final report, LG14 Province of Bolzano project

How climate change is influencing **evapotranspiration**, soil moisture **patterns** and water budget in alpine regions?

Modelling ET in complex mountain terrain



Effect of elevation

Effect of aspect N/S

Effect of soil thickness

Effect of topographic convergence (wetland)

Effect of land use (lake)

GEOtop hydrological model simulation

Bertoldi et al. , JHM (2006): Impact of Watershed Geomorphic Characteristics on the Energy and Water Budgets.

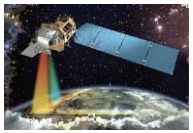
After 15 years still we do not know if that map was right!
How to get reliable **spatial observations** of **ET?**

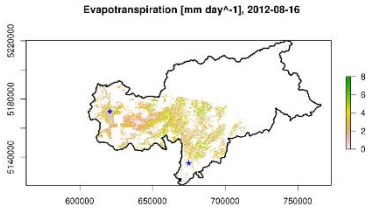
Observing ET with different approaches

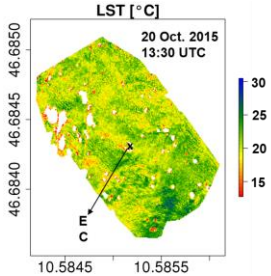
LT(S)ER Matsch / Mazia

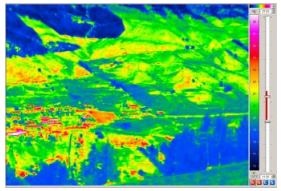
http://lter.eurac.edu

Remote sensing





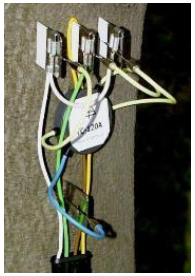




Eddy Covariance

Lysimeters

Sap-flow



Lot of new ET measurement approaches …
… but very difficult to compare …
How to deal with different support and footprint **spatial scales**?

Need of:

- Research **comparing** different ET measurements approaches.
- Research towards **spatial observations** of **ET** in mountain regions.

More discussion at the poster session!