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RECONSTRUCTING THE HYDRAULIC BALANCE IN
LAKE GARDA FOR A PROPER MANAGEMENT OF
THE WATER RESOURCES

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2° World War



Source: Historical Photographical Archive of di Peschiera del Garda

2° World War

Dam of Ponti sul Mincio



Source: Historical Photographical Archive of di Peschiera del Garda



1819-1829
mapire.eu

2° World War

Dam of Ponti sul Mincio

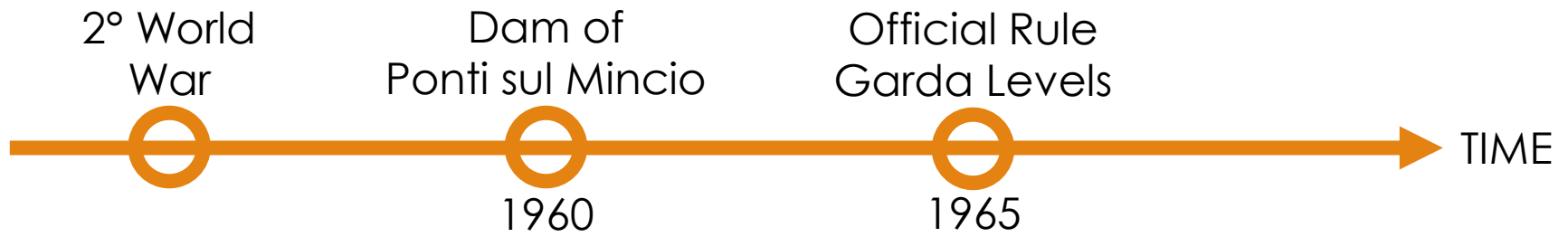


2018
googlemaps



1819-1829
mapire.eu

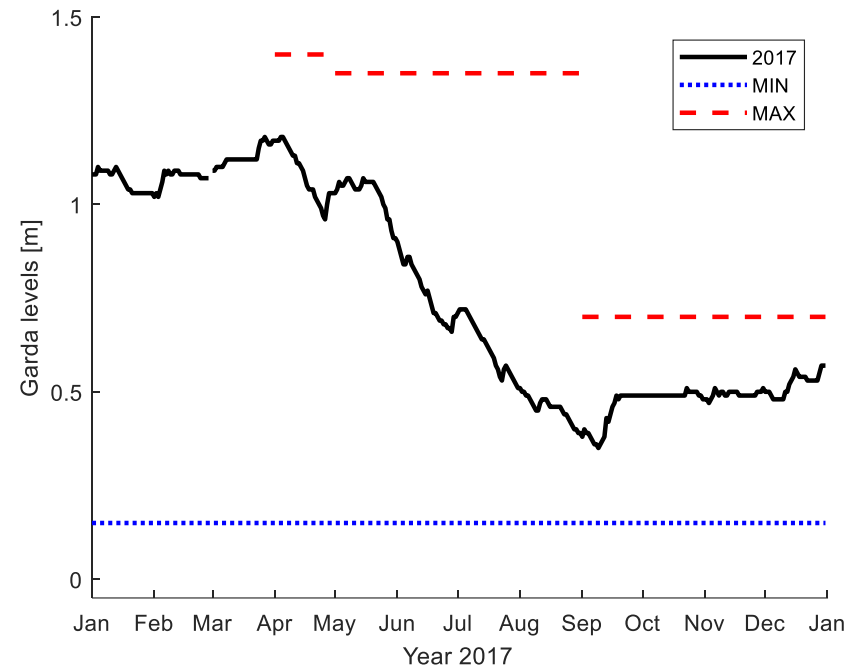
Source: Historical Photographical Archive of di Peschiera del Garda



Source: Historical Photographical Archive of di Peschiera del Garda

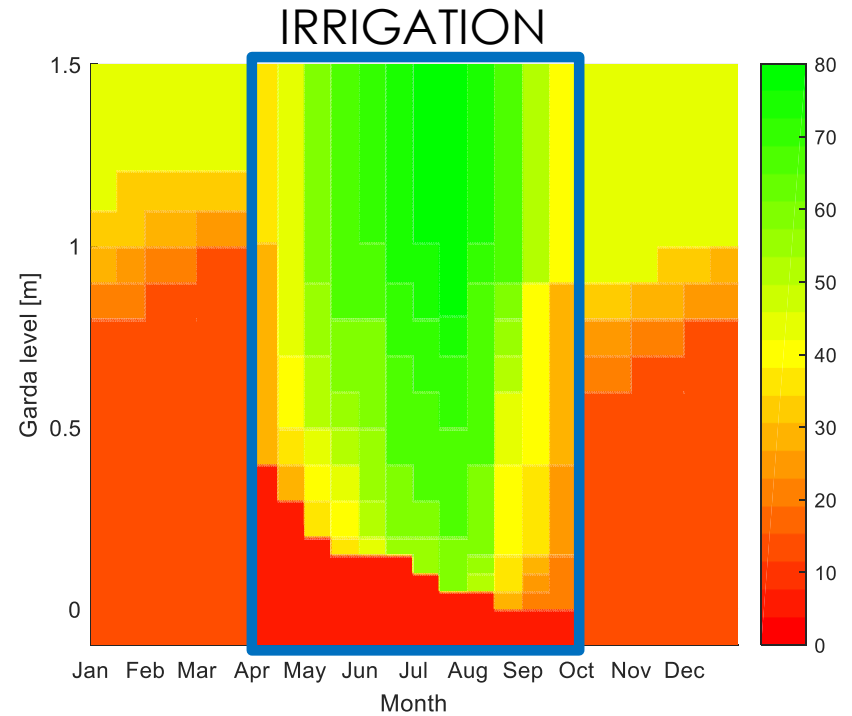
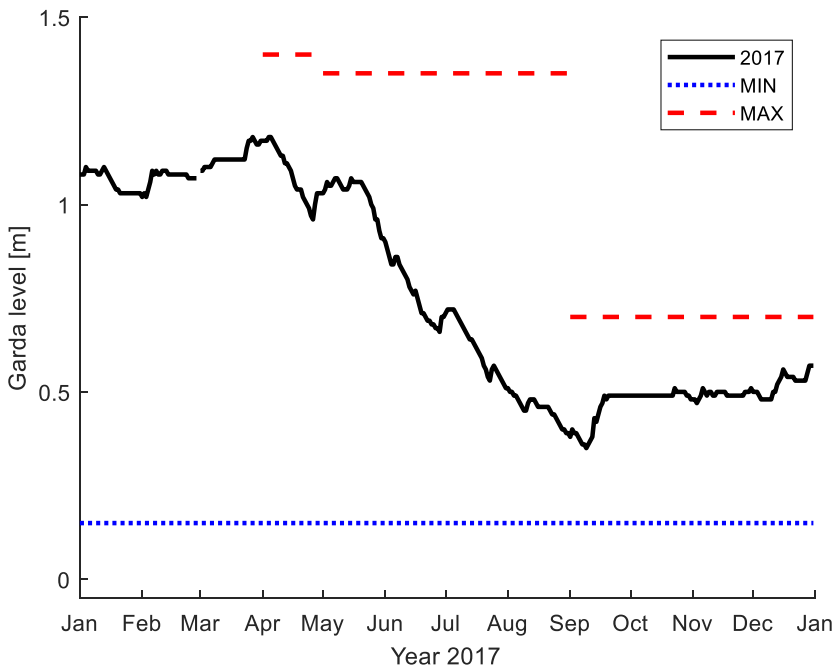


1819-1829
mapire.eu



Official Rule
Garda Levels

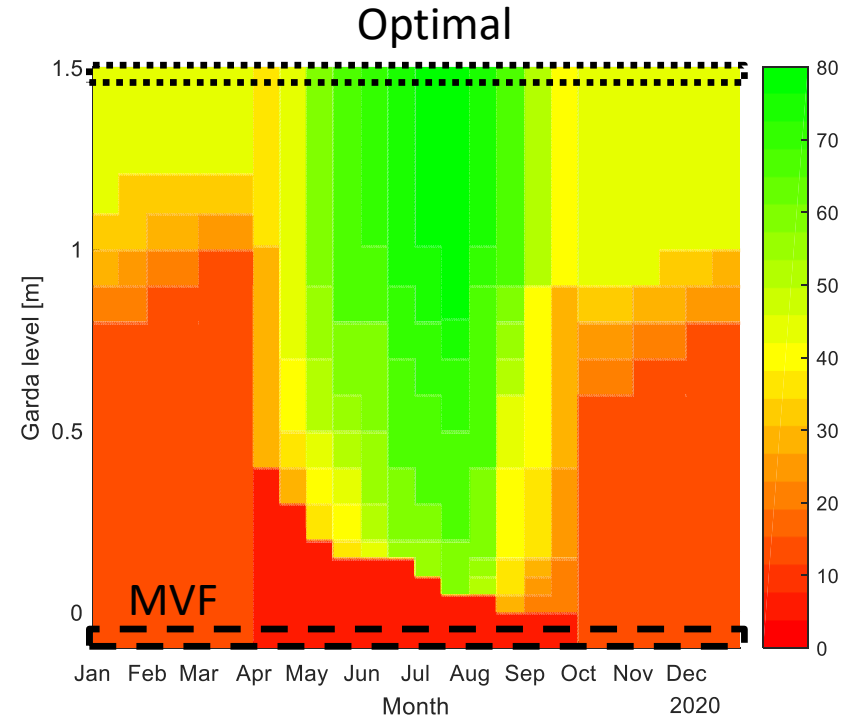
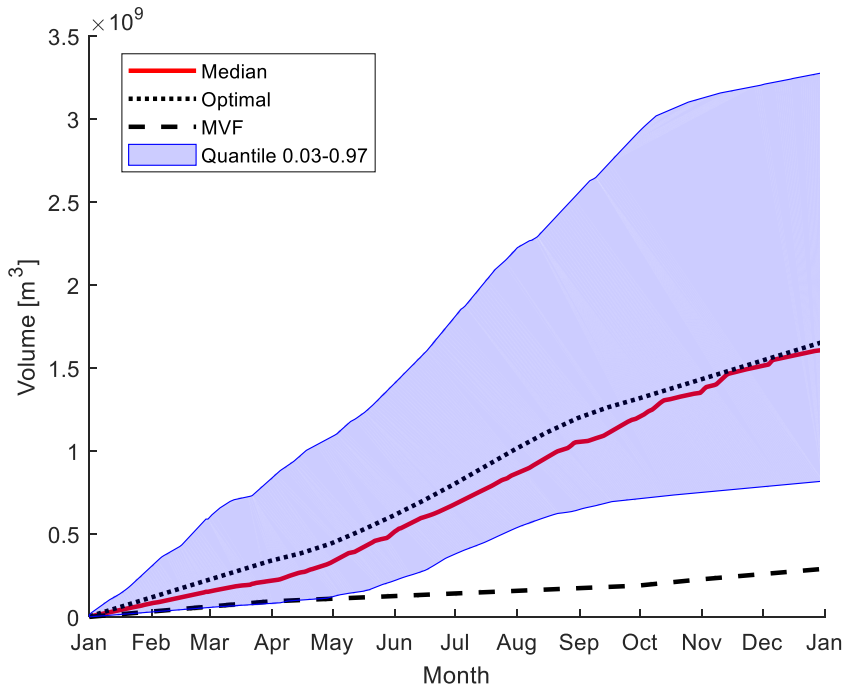
Experimental Rule
Garda Levels



Hydraulic balance

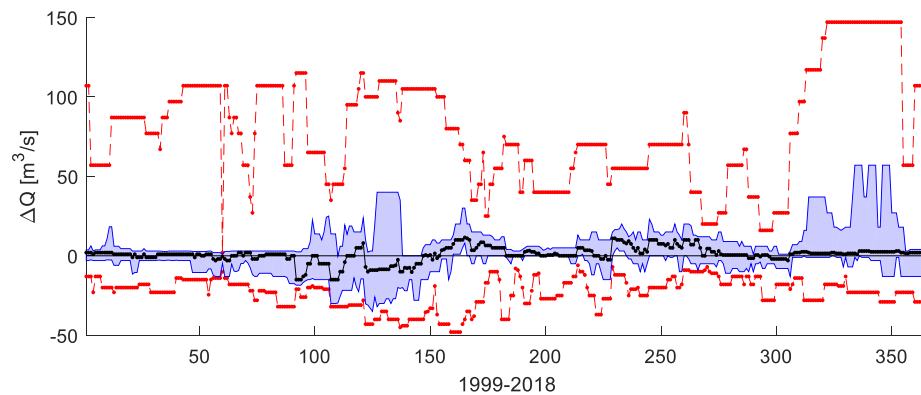
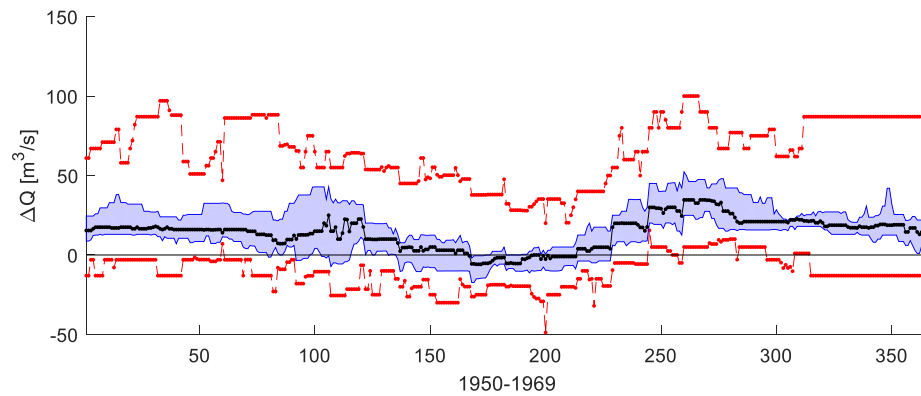
Official Rule Garda Levels

Experimental Rule Garda Levels

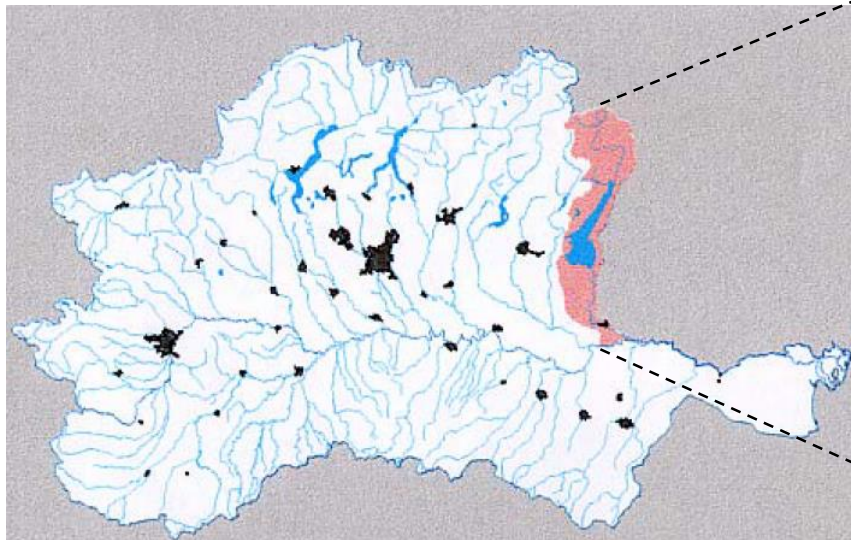


Hydraulic balance

Management comparison



Sarca-Garda-Mincio basin



Source: AdBPo

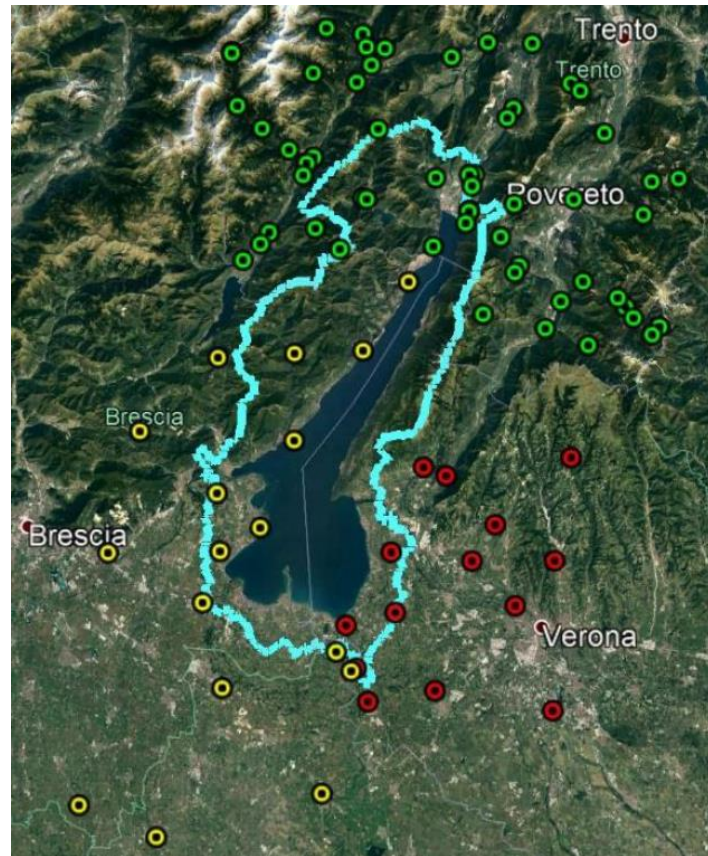


Presence of three regions

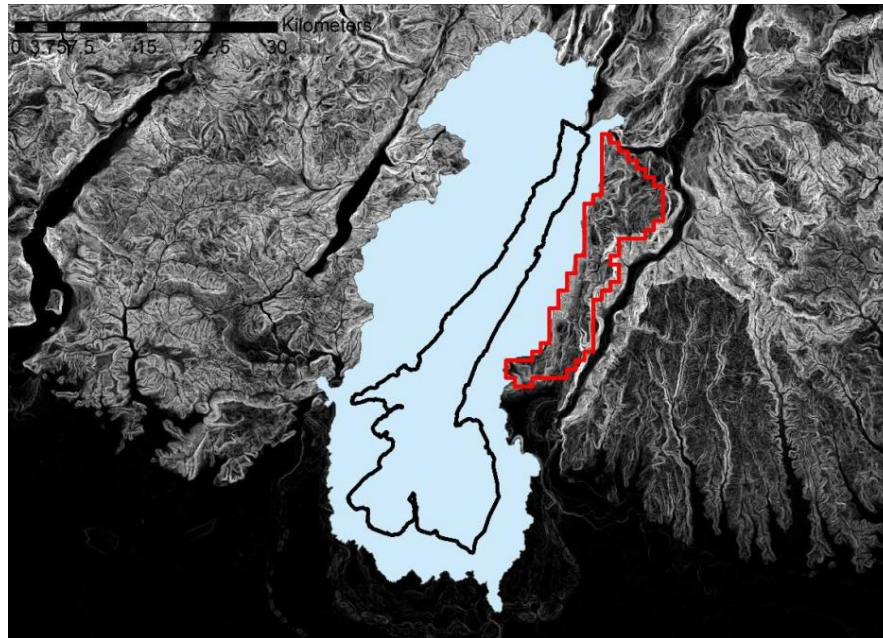
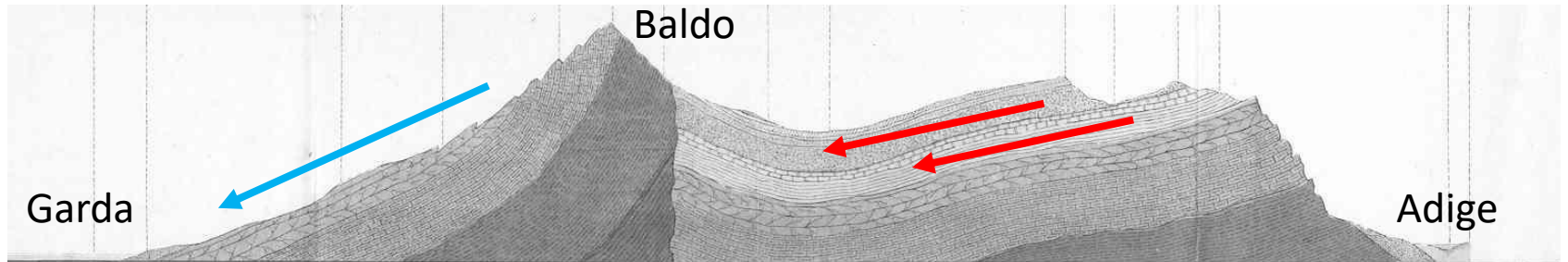
Trentino A.A.

Lombardy

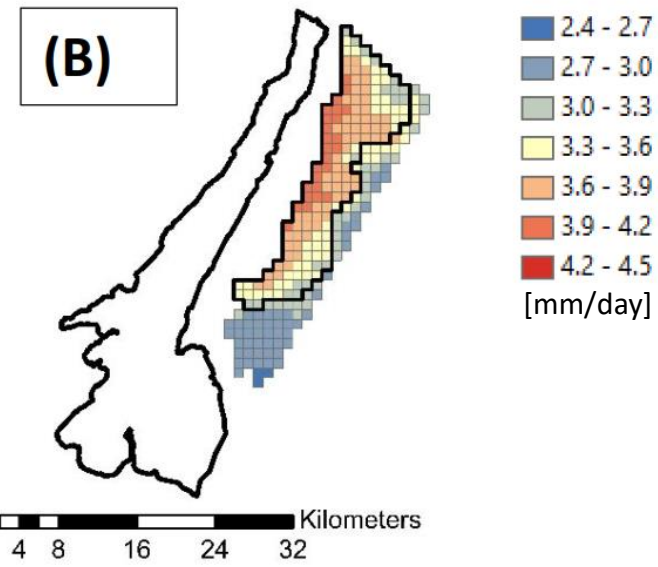
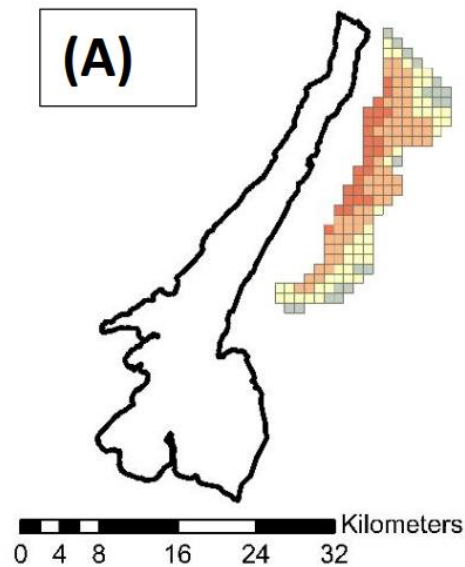
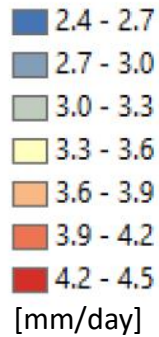
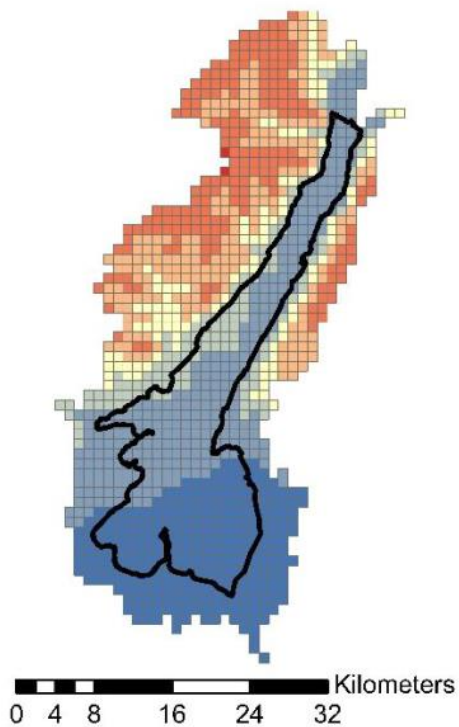
Veneto



The role of Mount Baldo

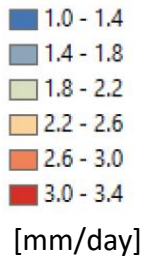
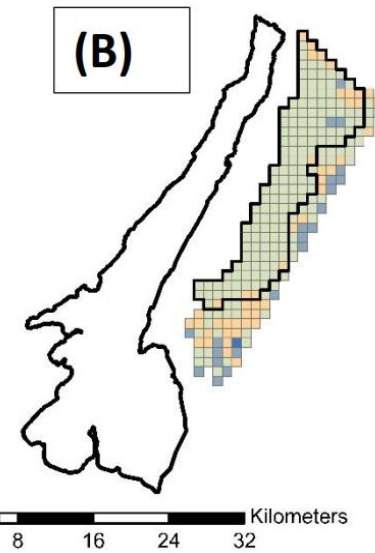
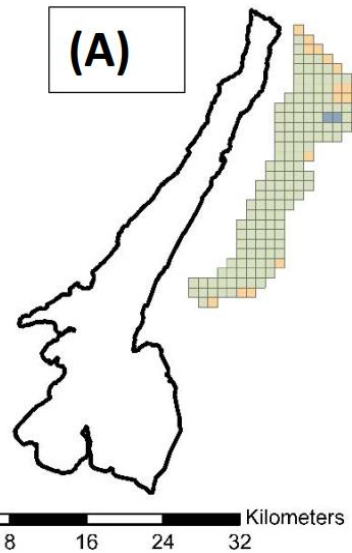
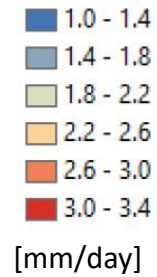
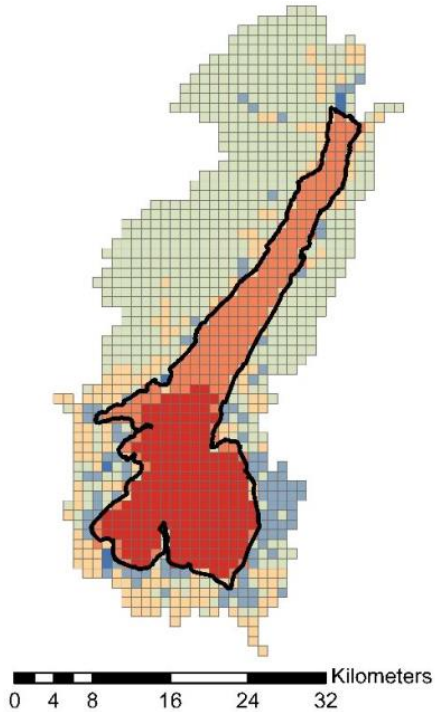


Precipitation



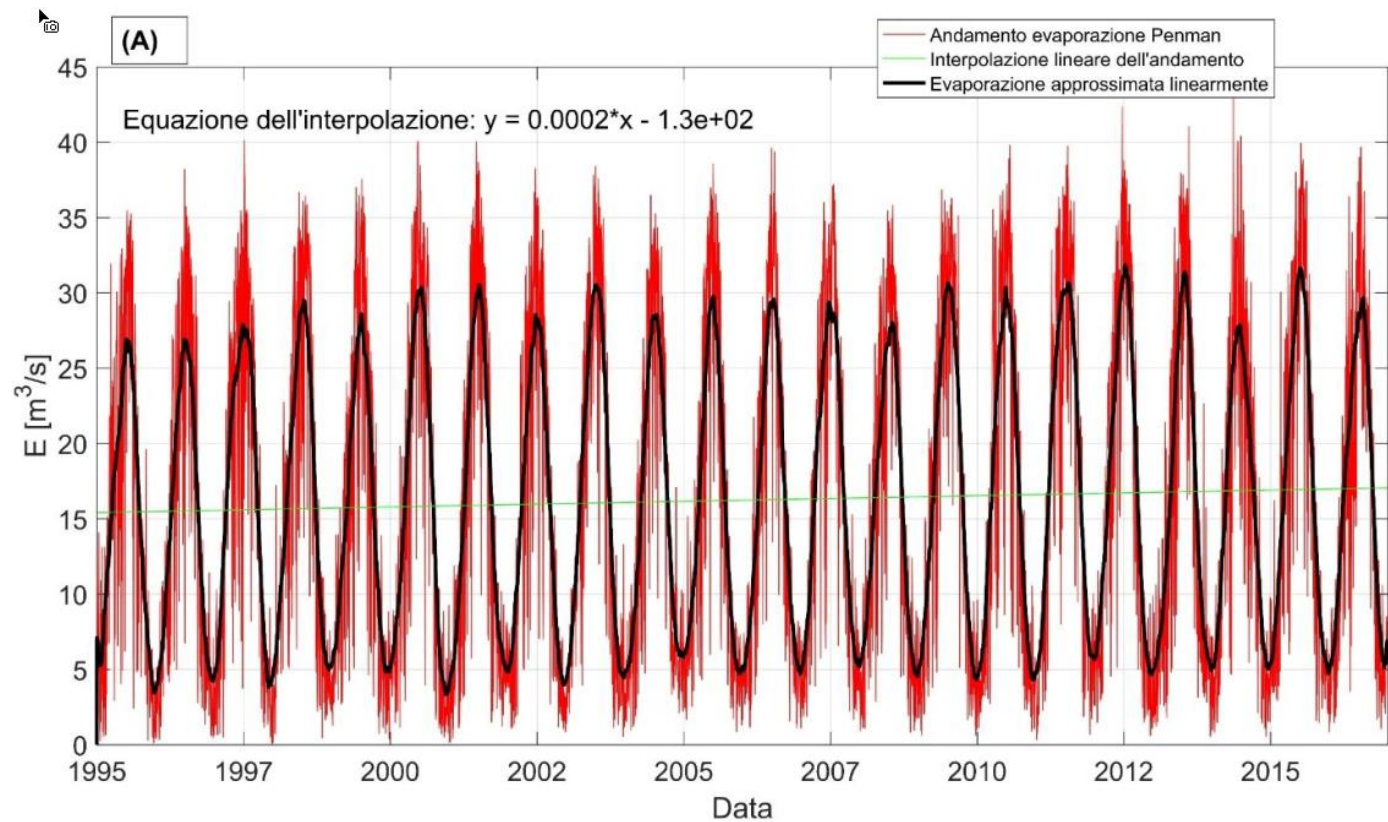
Evapotranspiration

Method: Hargreaves-Samani 1982



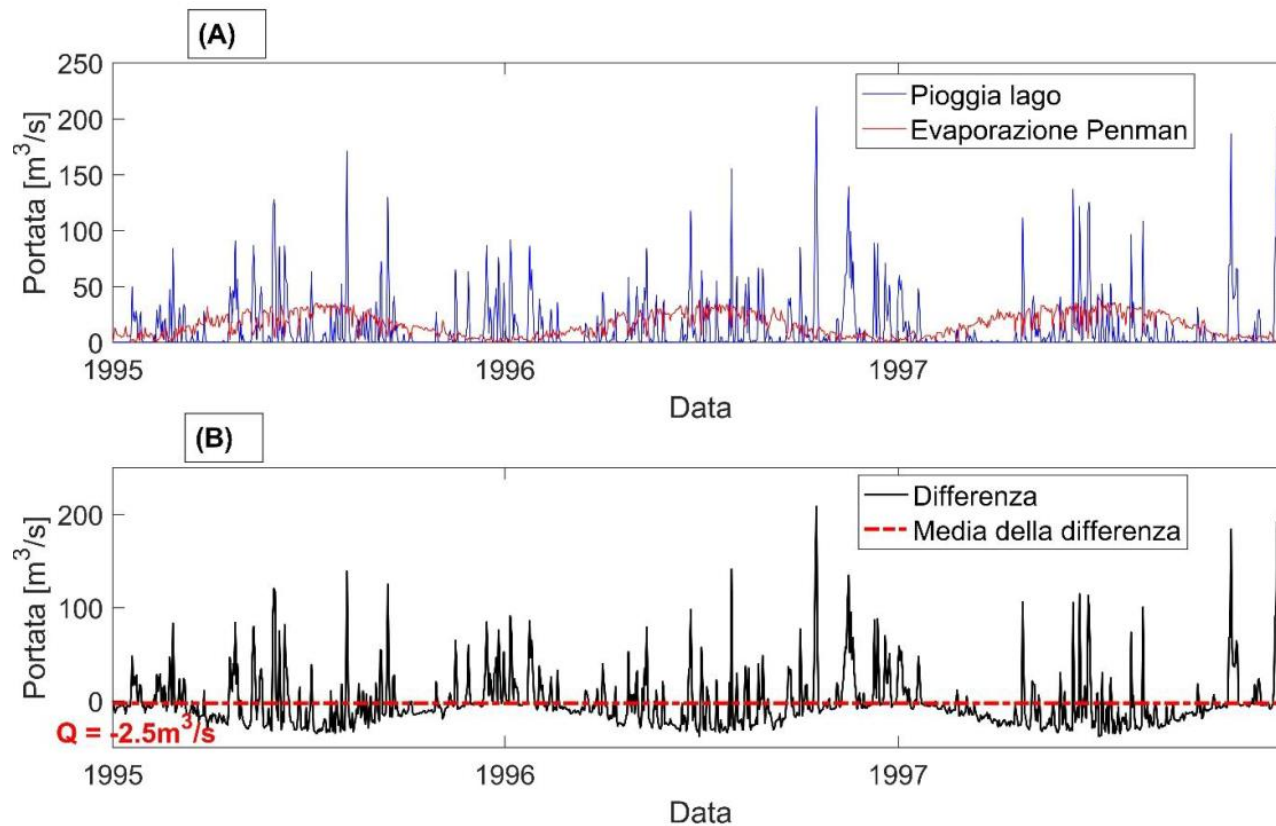
Evaporation

Method: Penman



Evaporation

Method: Penman



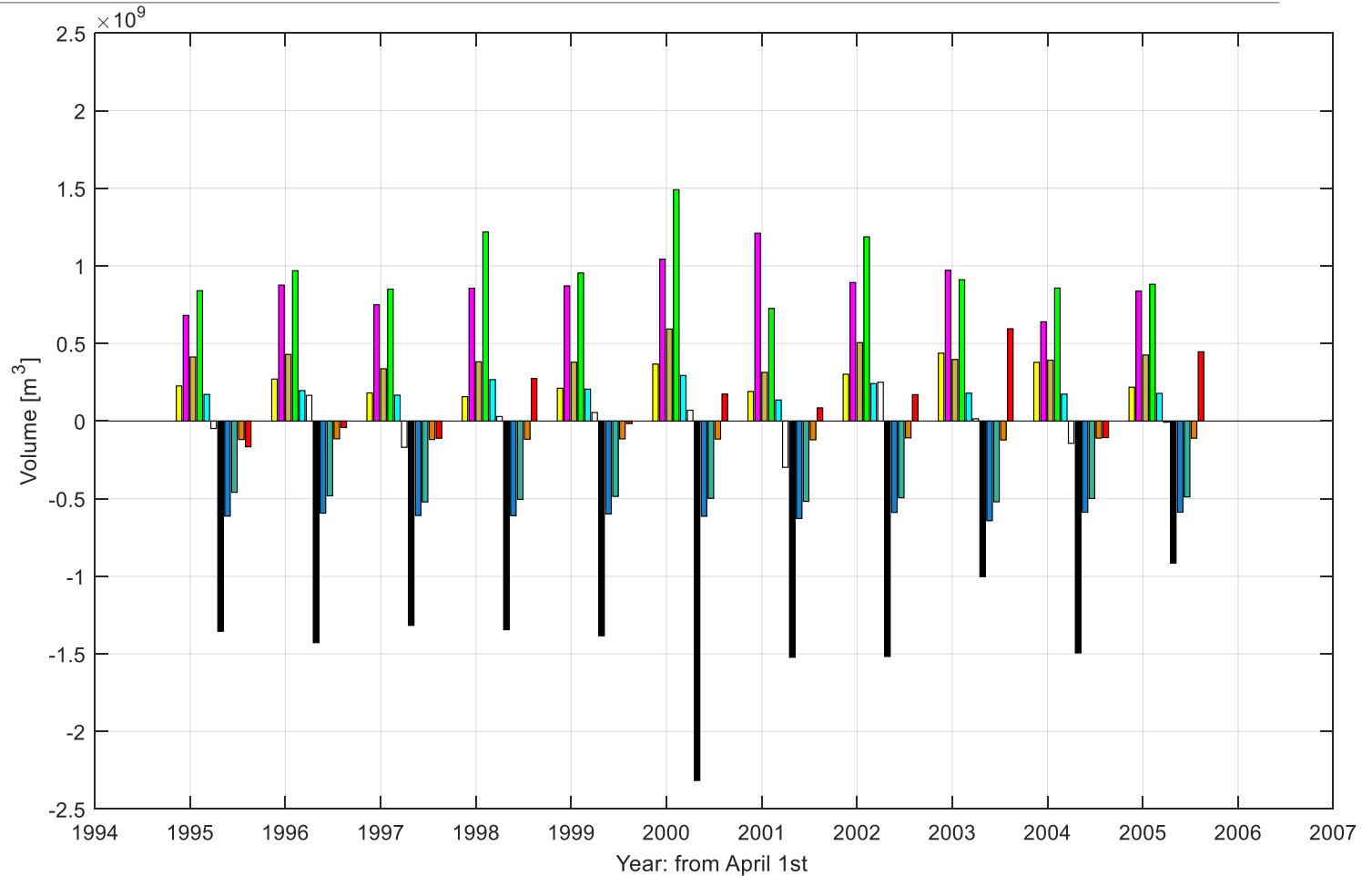
Hydraulic balance

$$\frac{dV}{dt} =$$

$$Q_{Sarca} + Q_{Torbole} + R_{Garda} + R_{Ledro} + R_{Baldo(A,B)} + \\ - Q_{Mincio} - E_{Garda} - ET_{Ledro} - ET_{Baldo(A)} \pm X$$

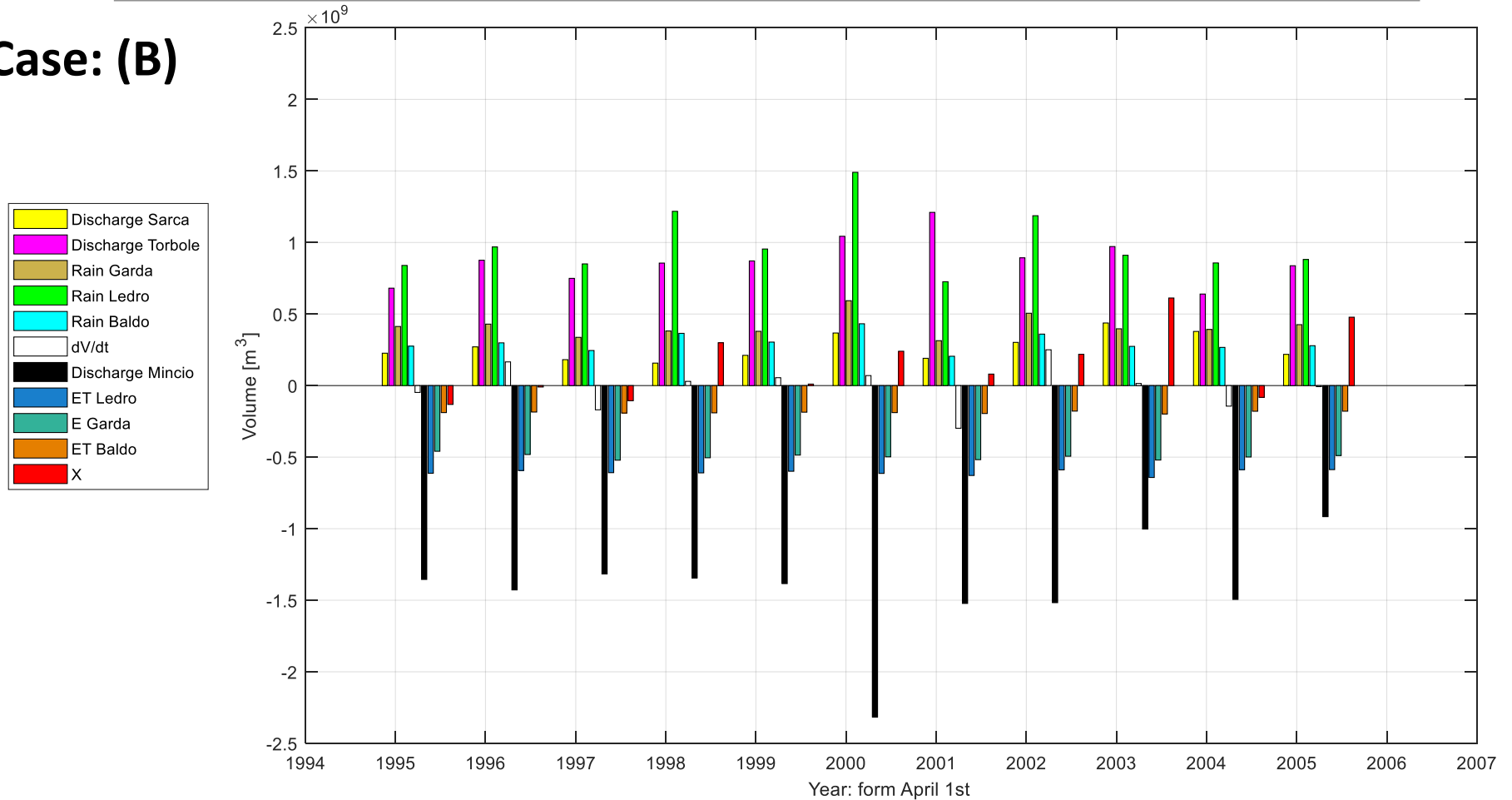
Hydraulic balance

Case: (A)



Hydraulic balance

Case: (B)



Question time

Discussion:

- Three regions/provinces that produces datasets with different standards
- Watershed modelling of input basins (Sarca, Ledro, Ponale)
- Hyporeic flow
- ...

Thanks for the attention!

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