

PP CITTA' UPDATE

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Setup of the simulations

Hindcast simulations:

- 2021081100 2021081500 (96h) Heat wave (old case)
- 2022063000 2022070106 (30h) Unstable/showers
- 2022082700 2022082806 (30h) Unstable/showers
- 2022090100 2022090206 (30h) Unstable/showers
- ICON 7km -> ICON 3.5km -> ICON 1.8km -> ICON 900m
- ICON (master branch June 2023)

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Setup of the simulations

CTR	lterra_urb=F	/	/	/
EI1	lterra_urb=T	lurbalb=T	lurbahf=T	Itype_eisa=1
El2	lterra_urb=T	lurbalb=T	lurbahf=T	ltype_eisa=2
EI3	lterra_urb=T	lurbalb=T	lurbahf=T	Itype_eisa=3

- itype_eisa=2: set infiltration and bare soil evaporation over impervious surface areas to zero. All precipitation goes into surface runoff
- itype_eisa=3: same as itype_eisa=2, plus formation of puddles on impervious surface areas
- itype_eisa=1: no change



11-15 August 2021



30 June 2022













27 August 2022









01 September 2022











Partial conclusions

- Small changes in rural areas
- In the dry case EI2 and EI3 overlap each other
- In wet cases, larger differences in RH than in T (in urban areas)
- Difficult to say something more about EI1/EI2/EI3
- Side comment: prec not very well forecasted (but there are justifications)

Test with different LU data (by IMS)

- Roni (IMS) produced new LU data using different land use data (The European Space Agency WorldCover 10 m 2021 product <u>https://esa-worldcover.org/en</u>), bypassing EXTPAR
- Data have been produced also for Turin area and these are the results as far as EI2 (aka NOEVAP) simulations are concerned

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Strategy

Longer tests are required (ideally the whole months of May/June 2023, quite wet, more advection in May, more convection in June)

Simulations hopefully by the end of the year and results in spring 2024...





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