



PP CITTA' UPDATE

Massimo Milelli

3 September 2024, 26th COSMO General Meeting, Offenbach



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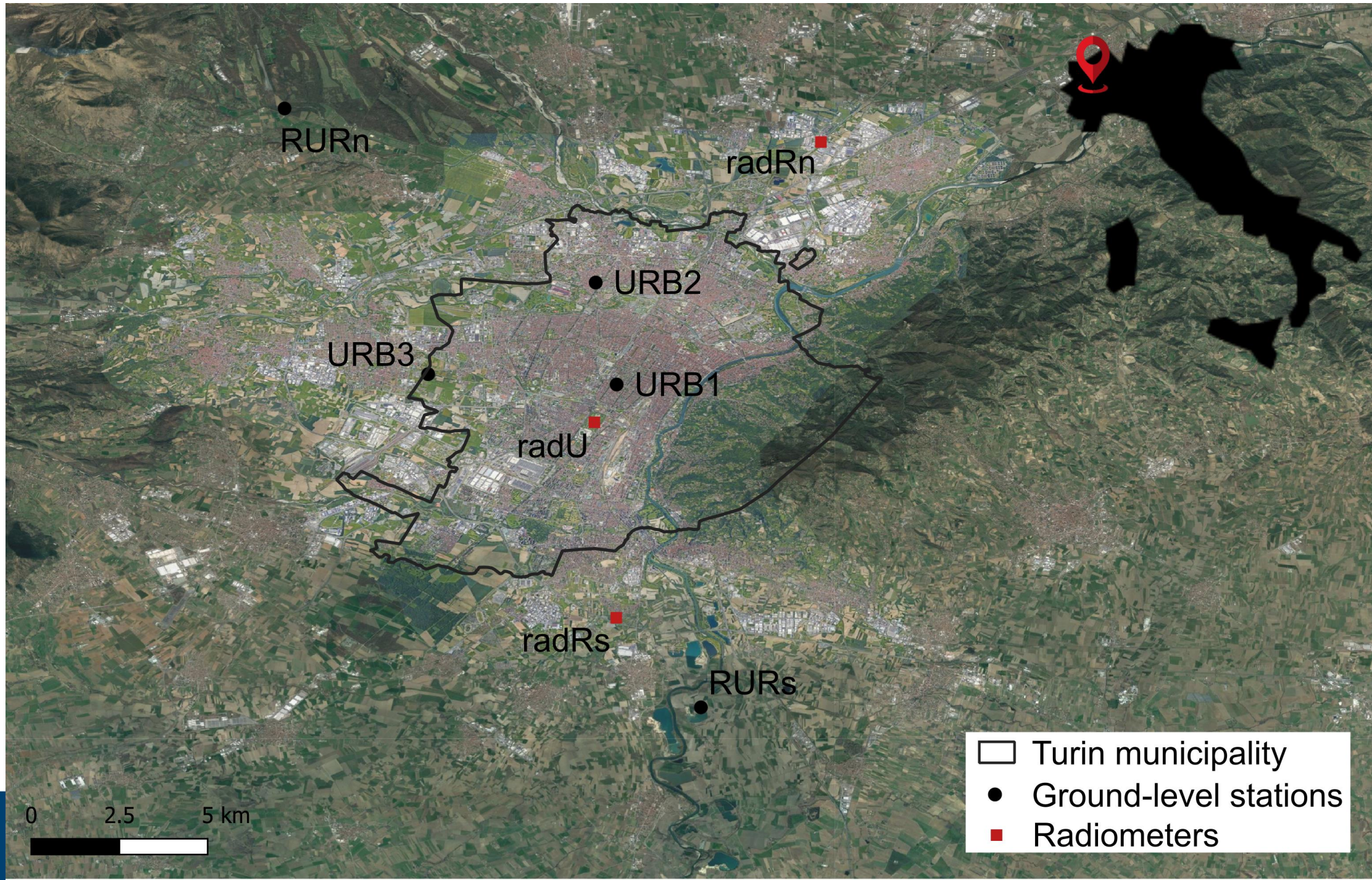


Setup of the simulations

Hindcast simulations:

- 2023050100 - 2023070100 (2 months)
- ICON 7km -> ICON 3.5km -> ICON 1.8km -> ICON 900m
- ICON (master branch June 2023)
- ICON (master branch July 2024)

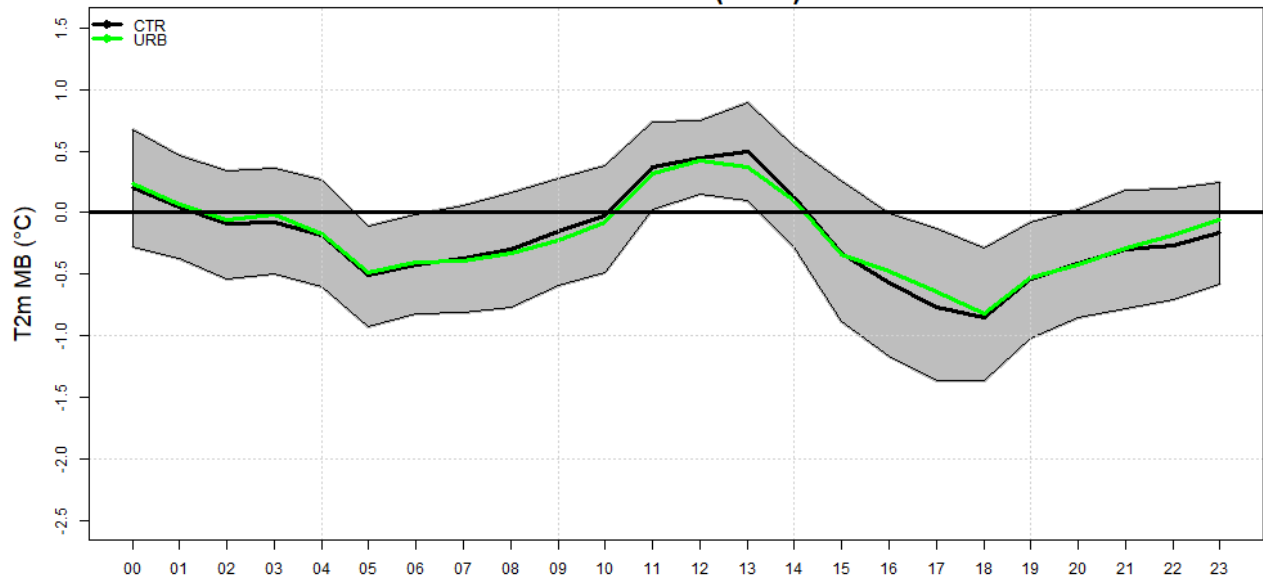
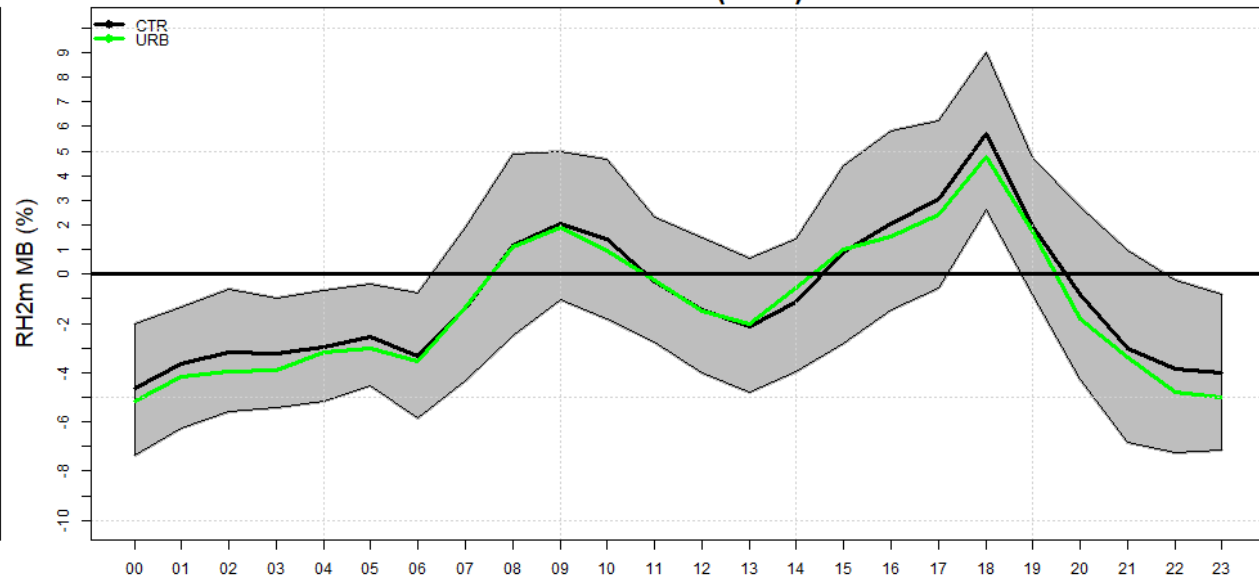
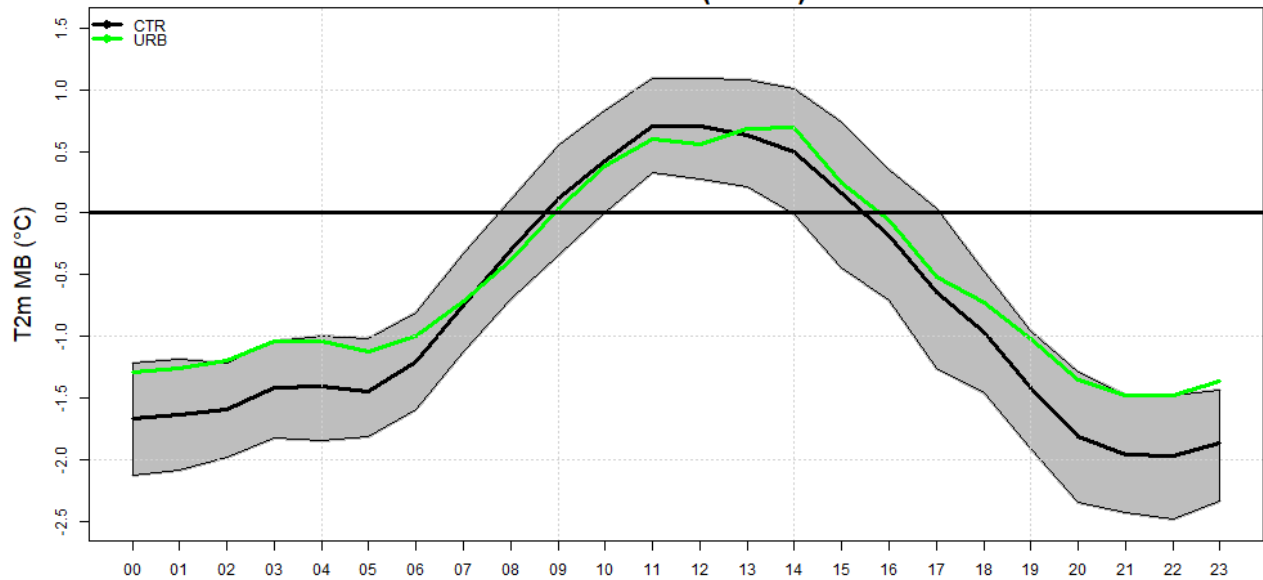
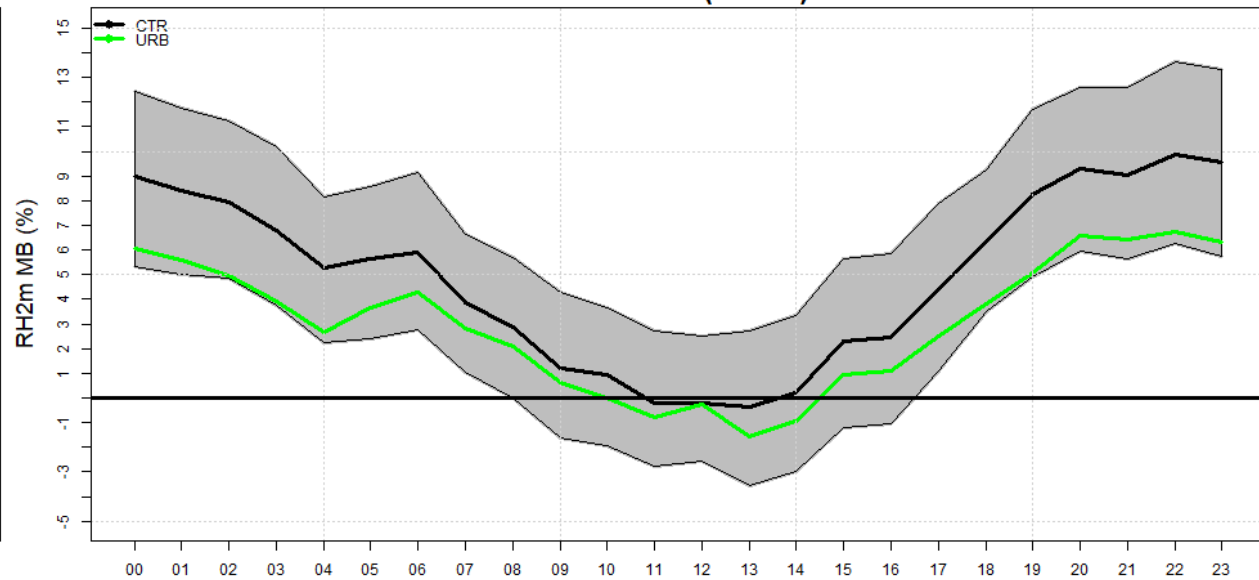


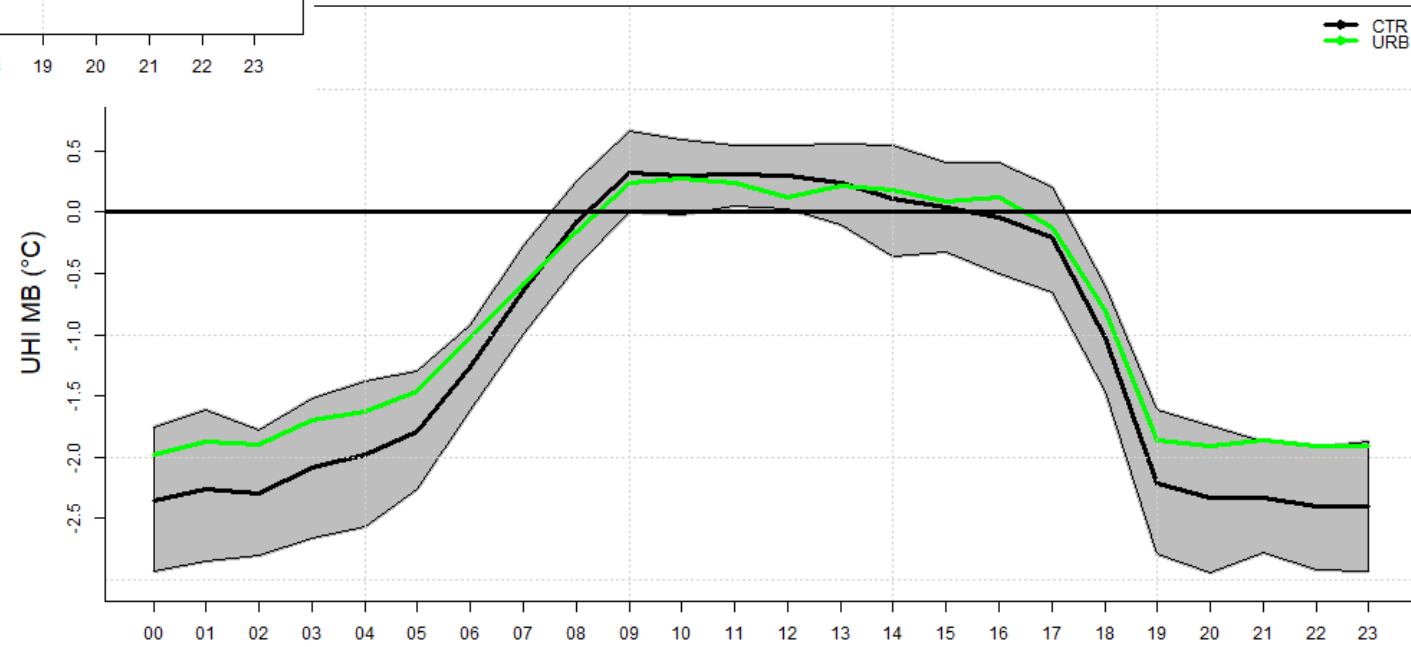
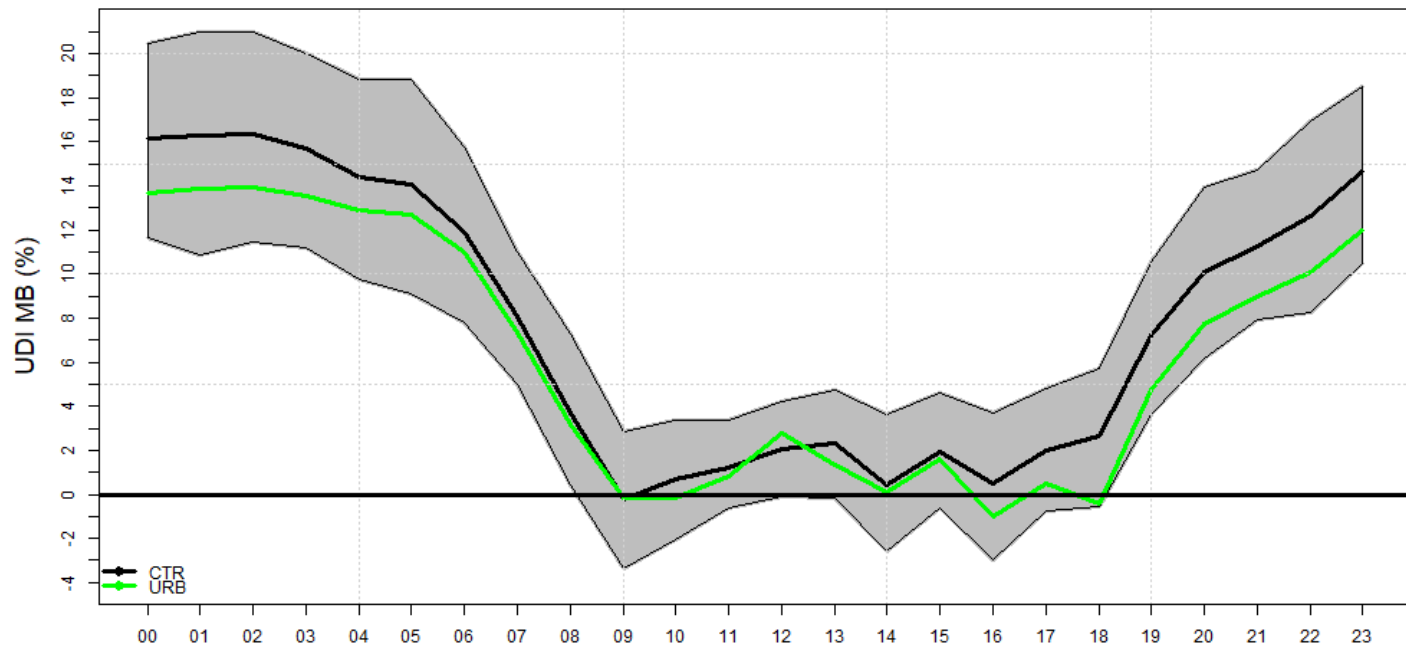


ICON July 2024

URB	lterra_urb=T	lurbalb=T	lurbahf=T	ltype_eisa=2
CTR	lterra_urb=F	/	/	/

- Annual cycle for AHF which has a minimum in summer. AHF is related to the climatological T_{2M} value, in the temperature range 15-20 °C, AHF reaches a minimum
- Instead of using a value of URB_ISA=1 in the urban tile of ICON, values lower than 1 are allowed. Therefore, URB_ISA stays large in city centres, and gets smaller in the suburbs
- Mean diurnal cycle of T2m/RH2m/UHI/UDI Mean Bias
- Confidence interval calculated with bootstrap method (Hamill, T. M., Weather and Forecasting, 14, 155-167, 1999, [https://doi.org/10.1175/1520-0434\(1999\)014<0155:HTFENP>2.0.CO;2](https://doi.org/10.1175/1520-0434(1999)014<0155:HTFENP>2.0.CO;2))

Bauducchi (rural)**Bauducchi (rural)****Consolata (urban)****Consolata (urban)**

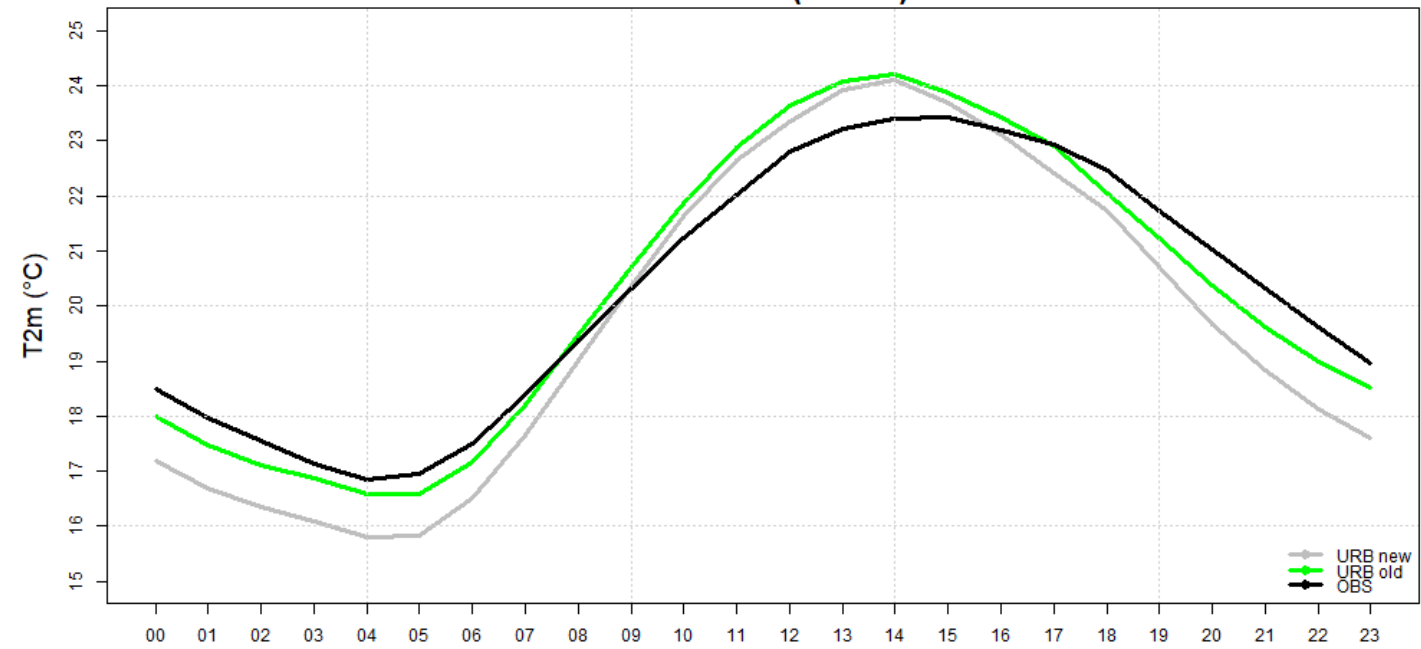


ICON July 2024 vs ICON June 2023

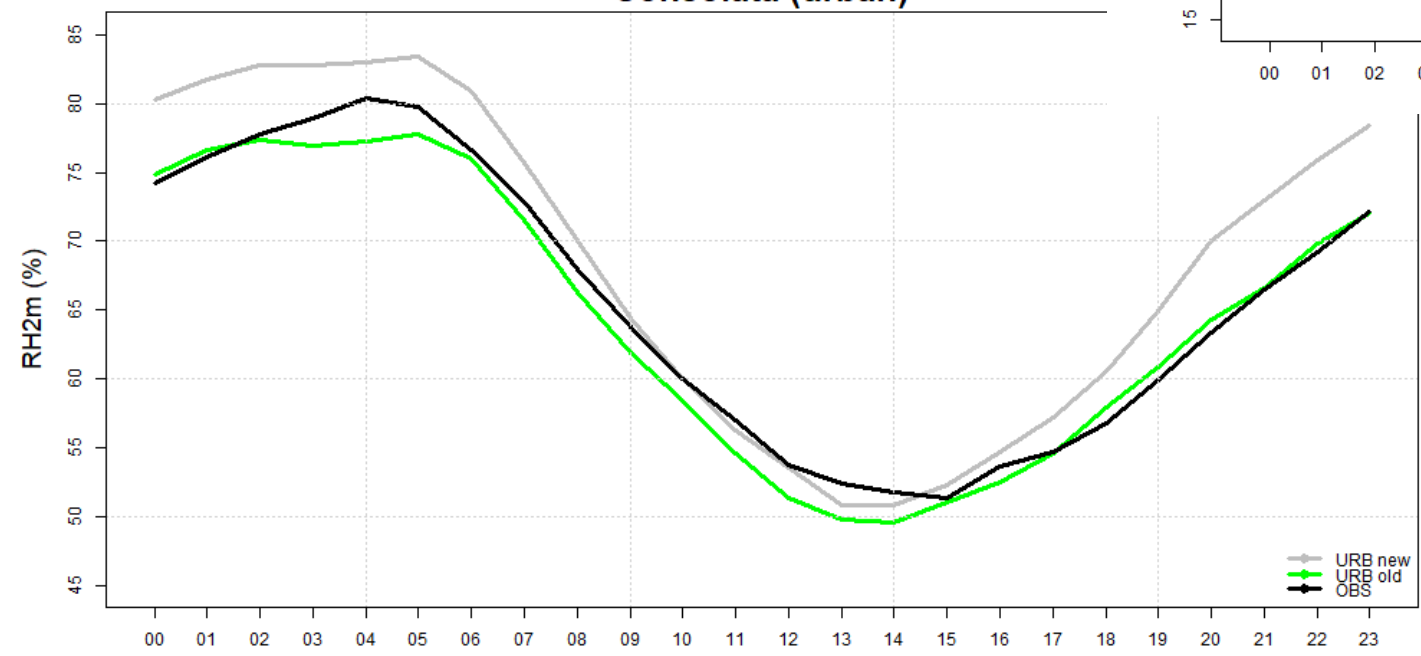
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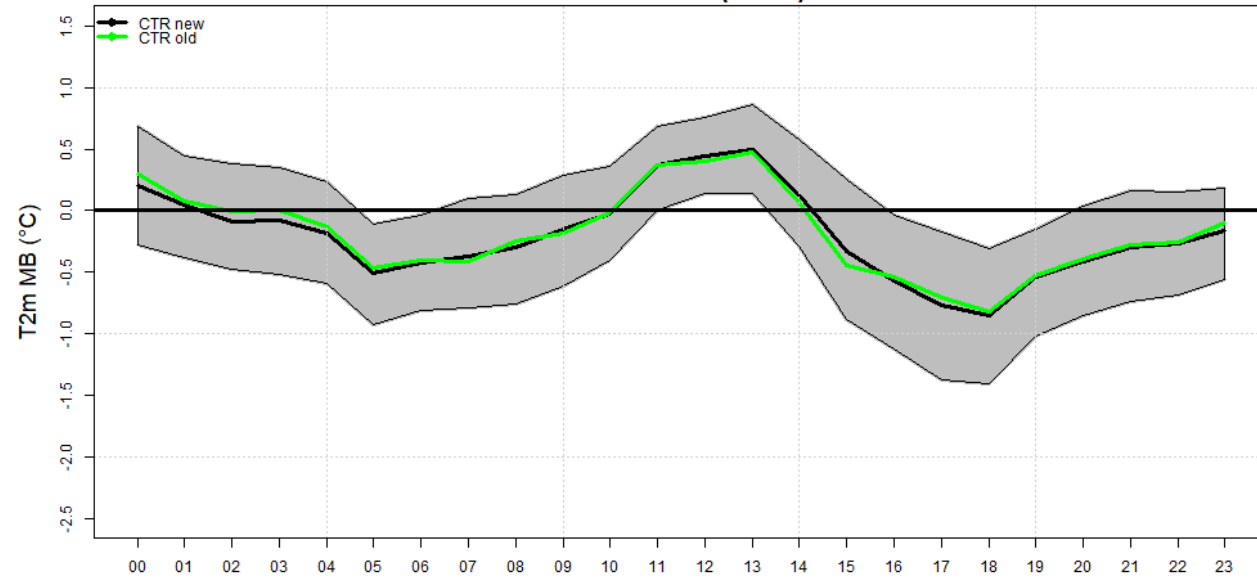
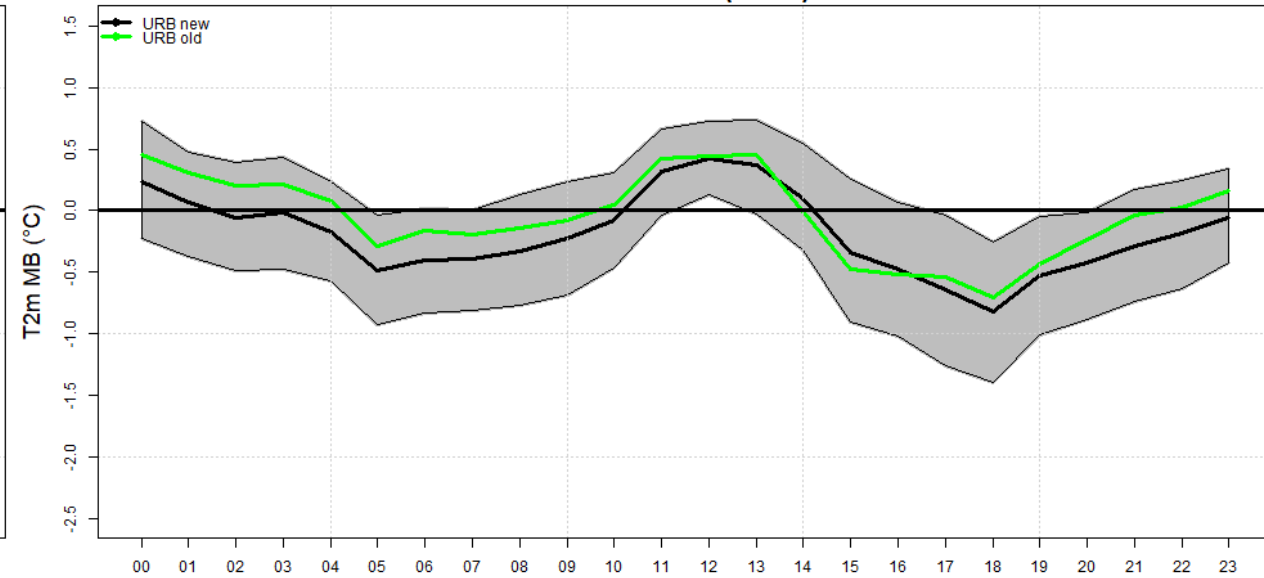
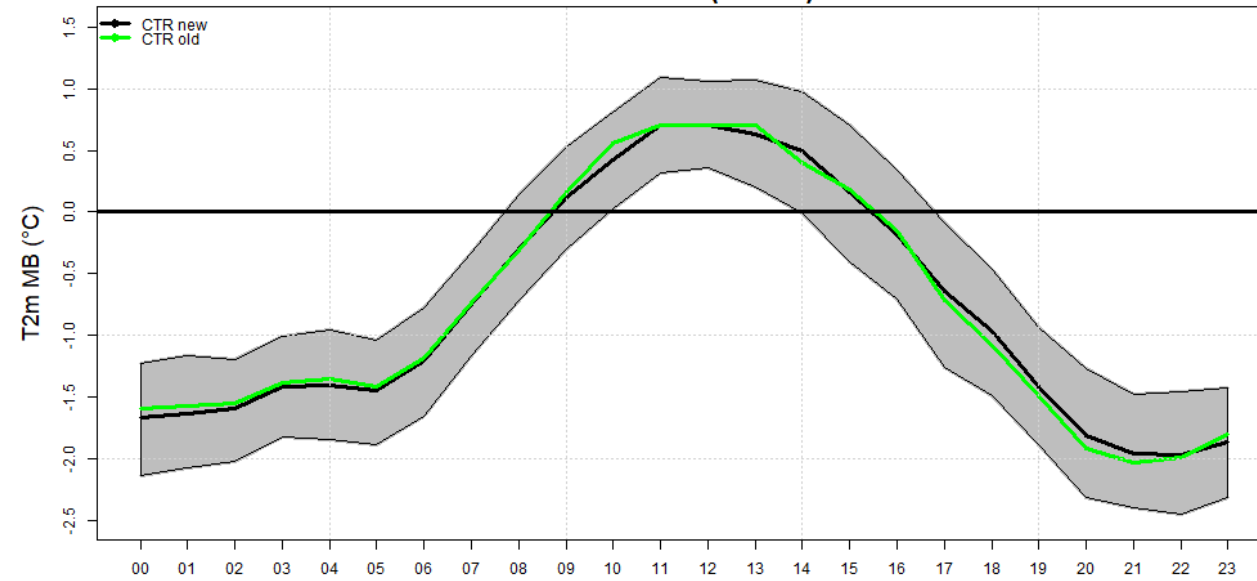
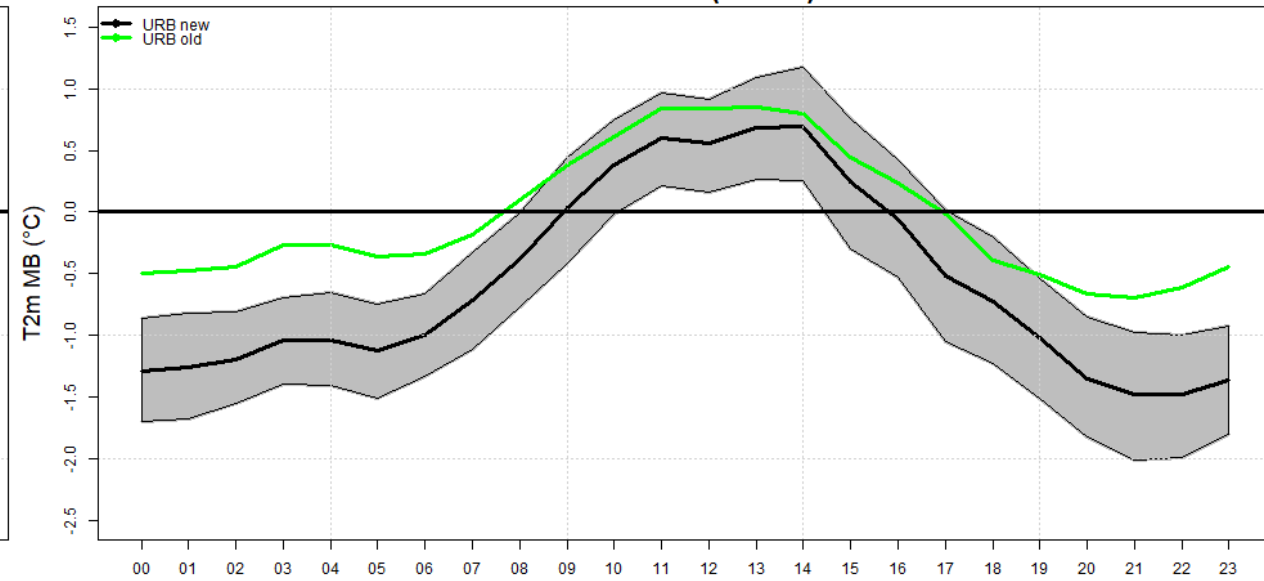
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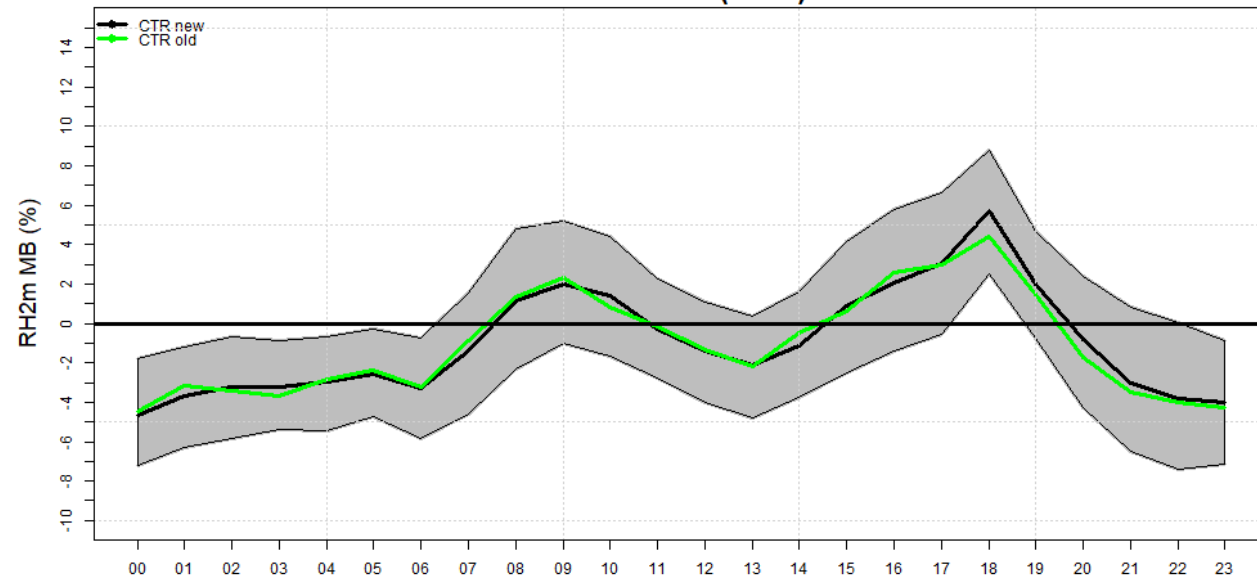
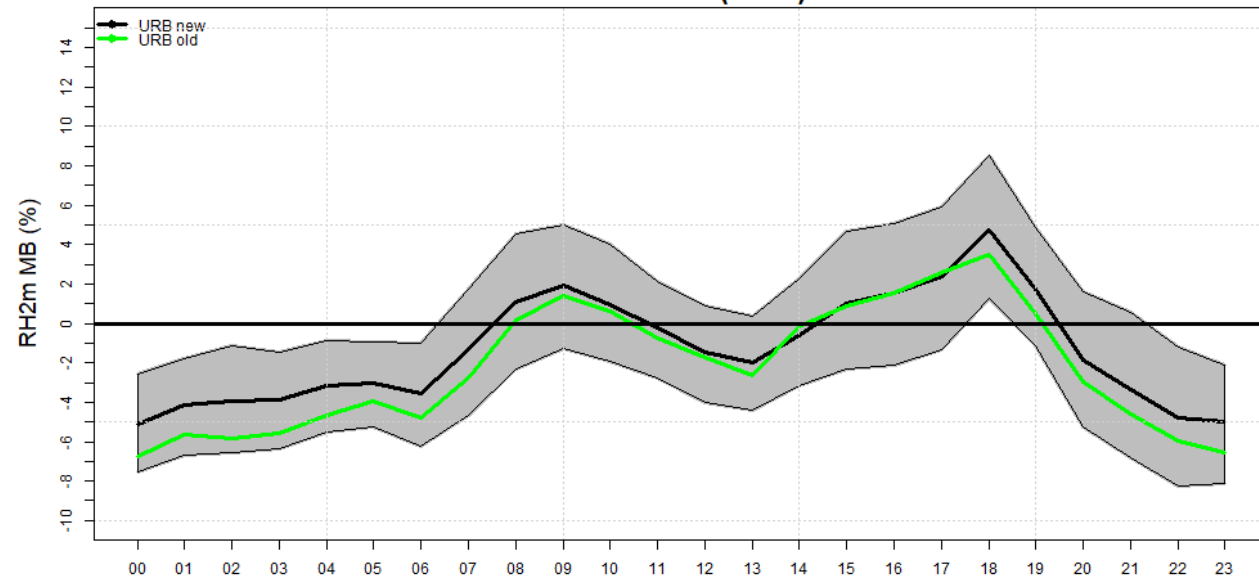
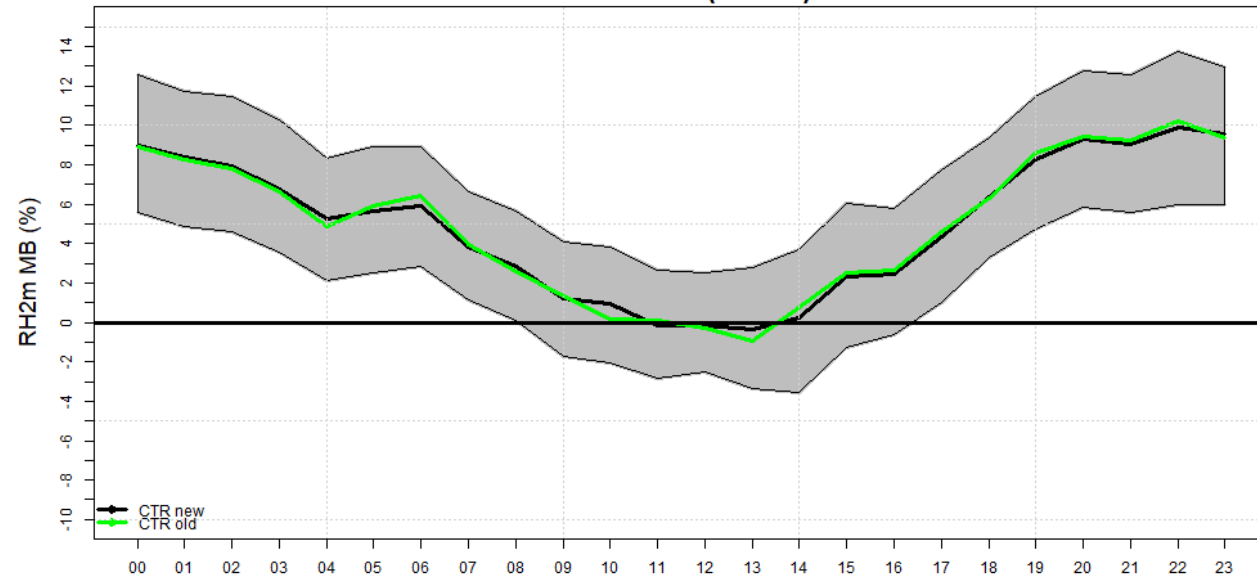
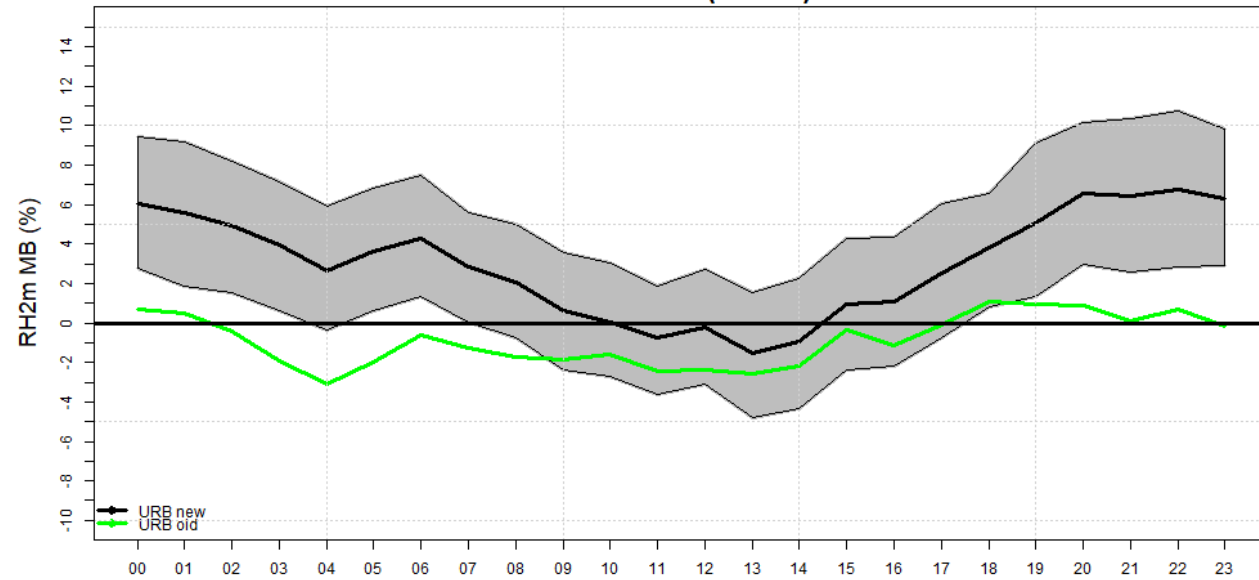
Consolata (urban)

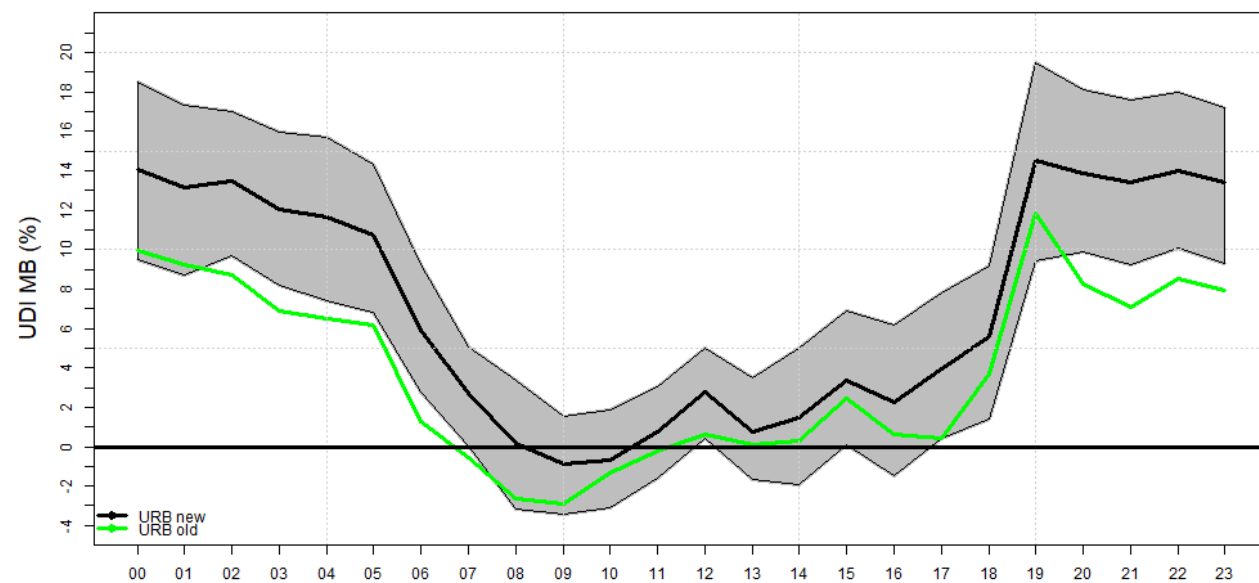
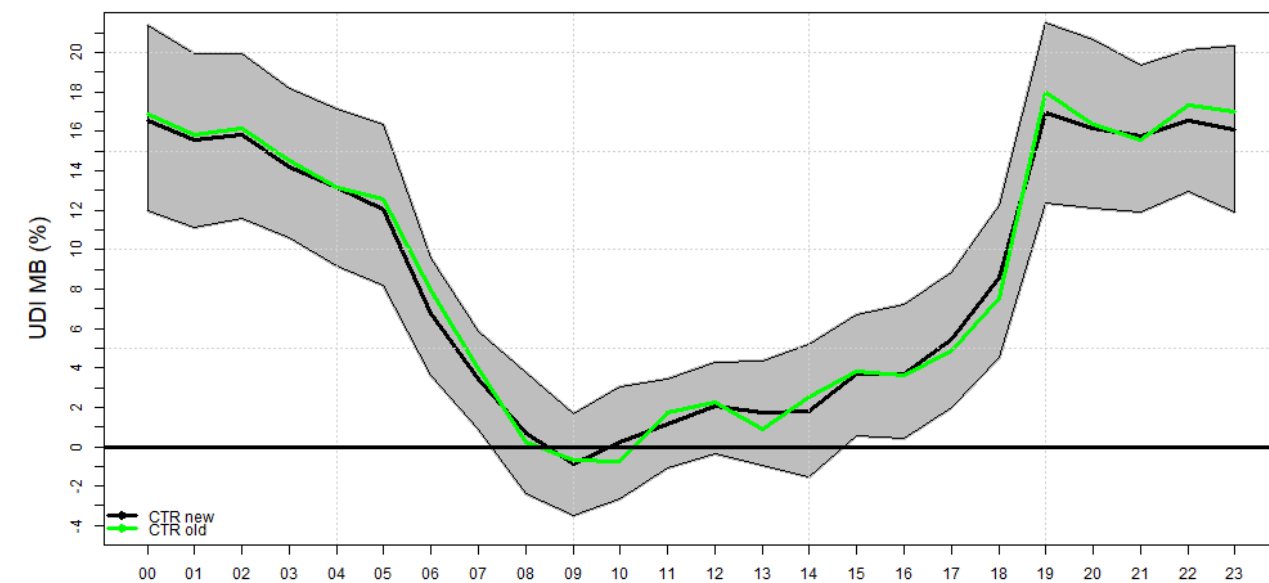
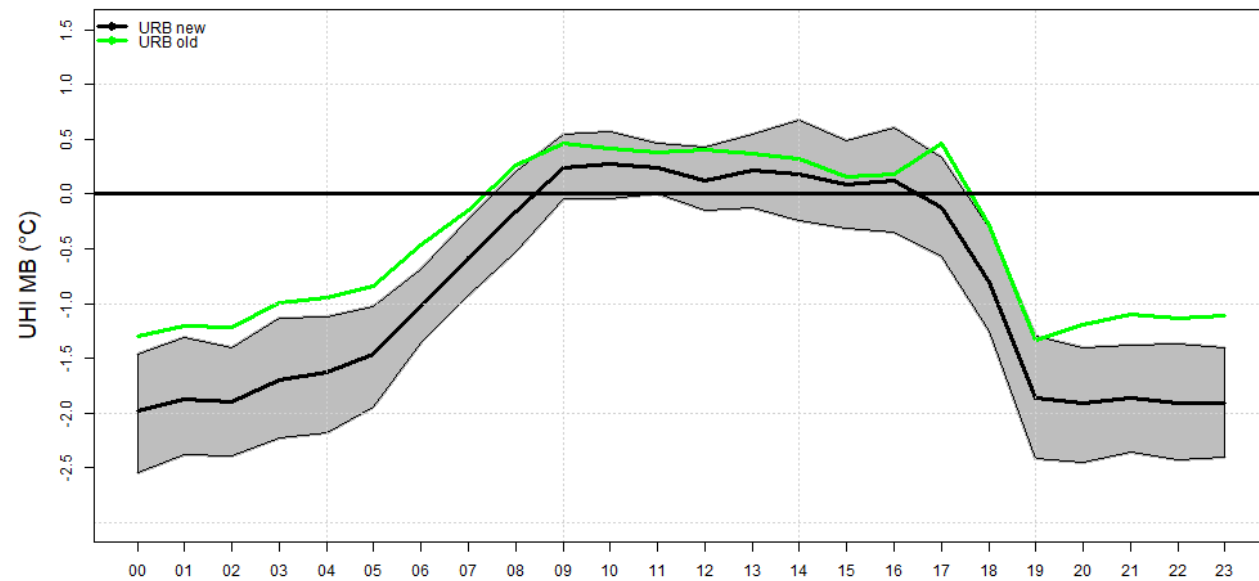
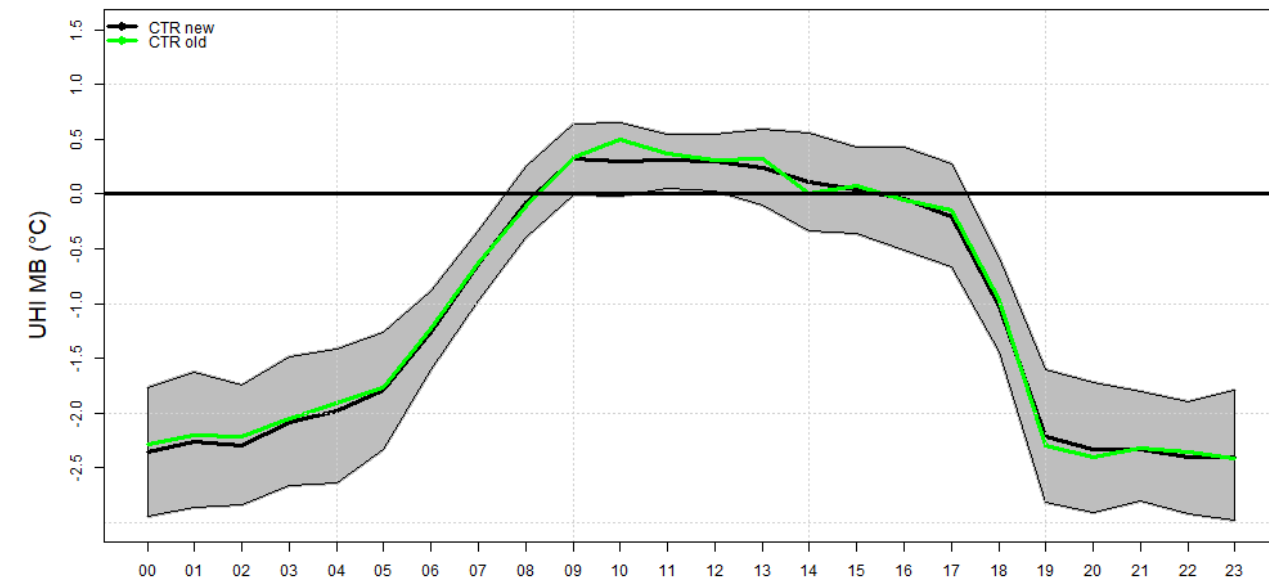


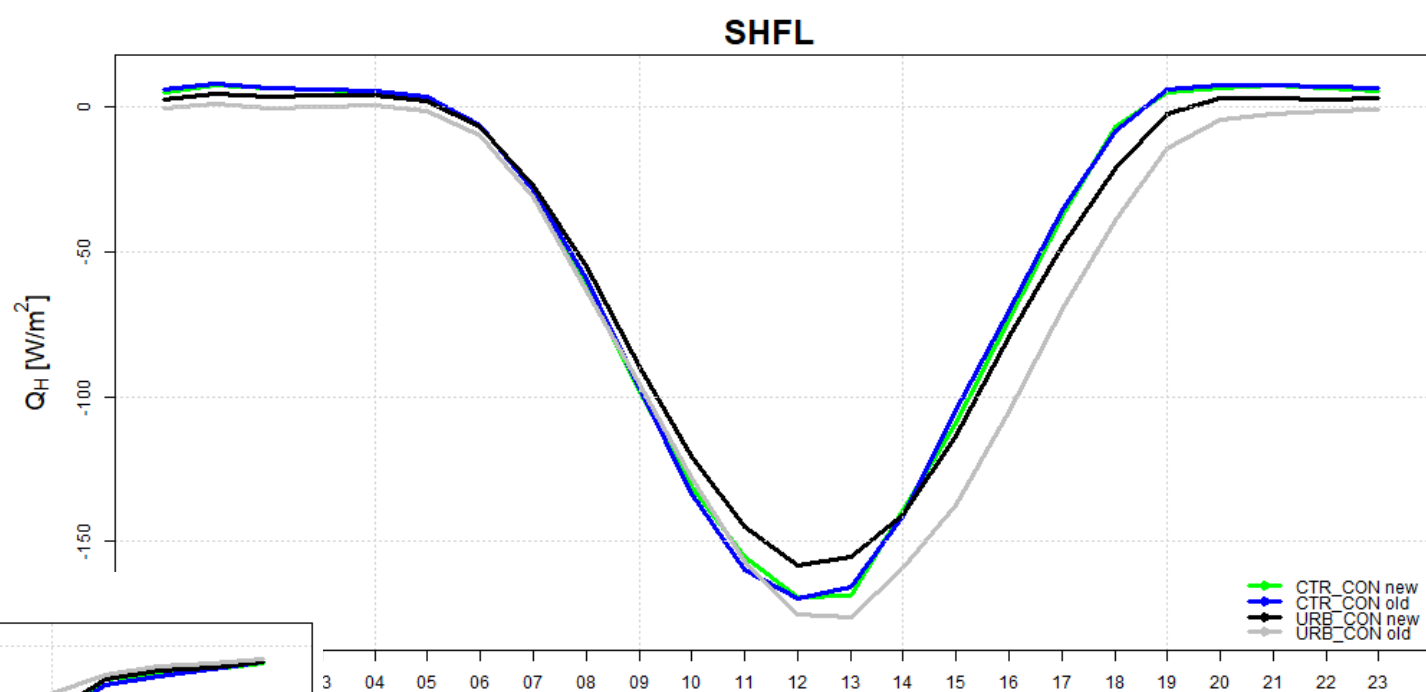
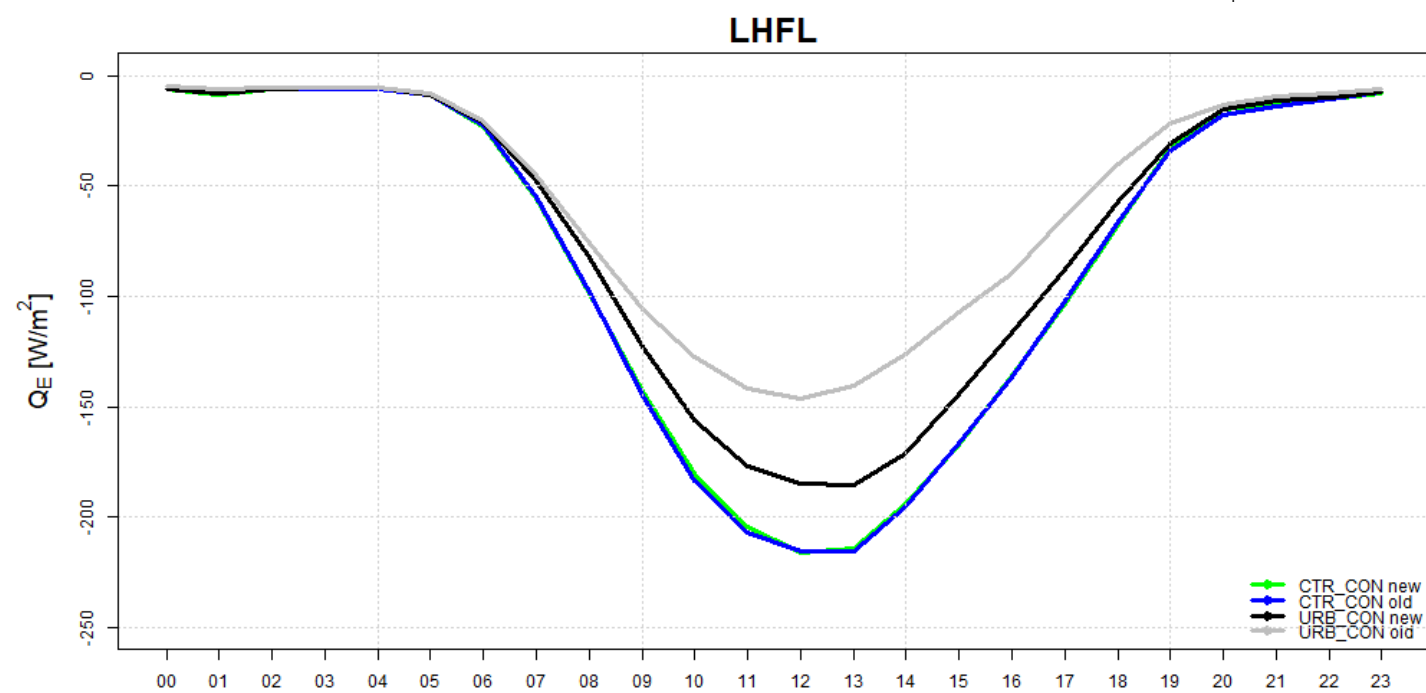
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Conclusions

T2m New vs Old	Urban areas	Rural areas
TERRA_URB off (CTR)	~ =	~ =
TERRA_URB on (URB)	Too cold nights	~ =

RH2m New vs Old	Urban areas	Rural areas
TERRA_URB off (CTR)	~ =	~ =
TERRA_URB on (URB)	Too moist nights	~ =

LHFL too strong and SHFL too weak → the city comes closer to a rural area... ? Is it city-dependent ?



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