

PT AEVUS2 – Analysis and Evaluation of TERRA-URB scheme

Simulations over a domain located in southern Italy

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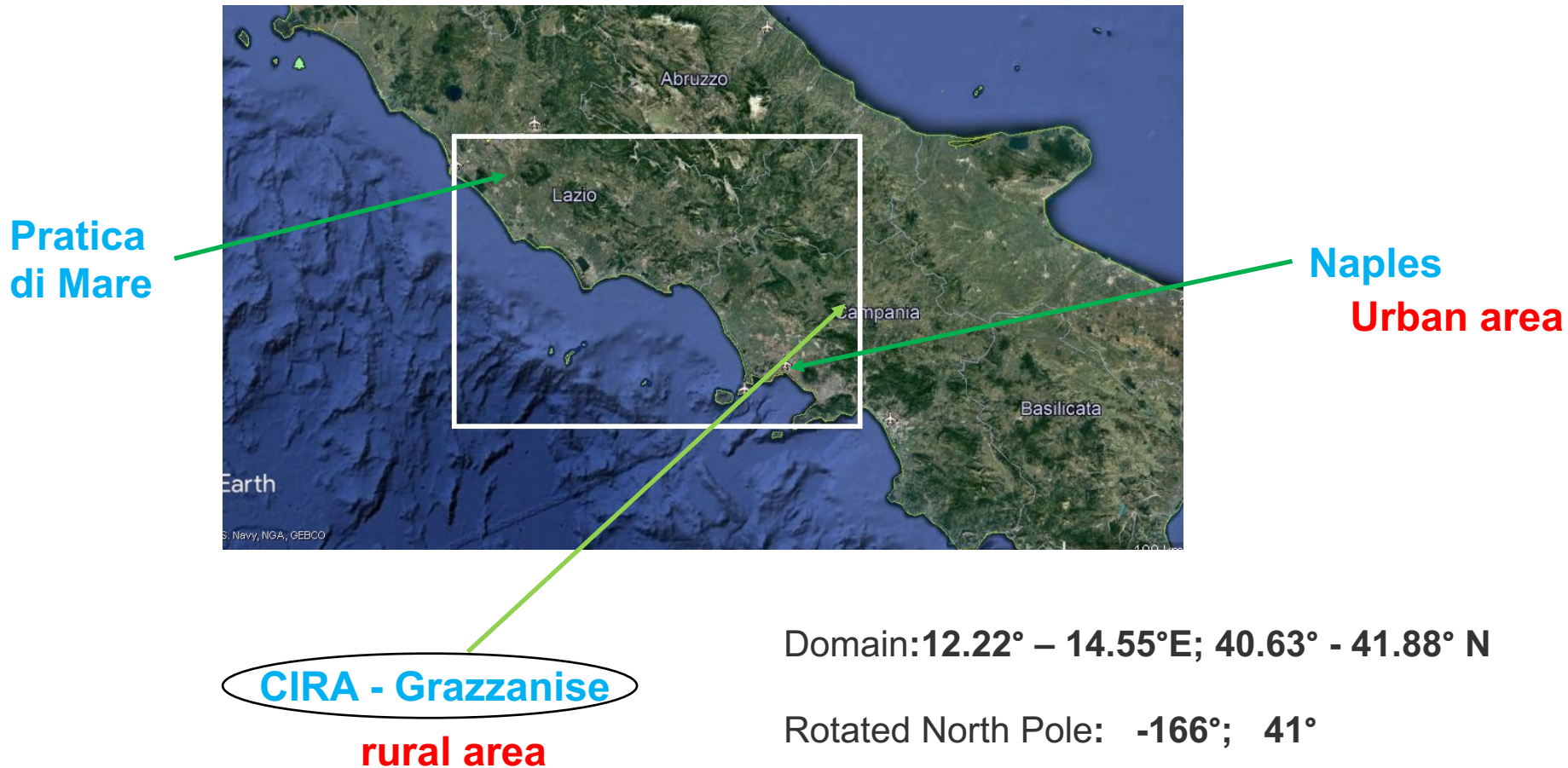
CMCC- Euromediterranean Center on Climate Change

PT AEVUS2 Webex

28th May 2020

The domain considered

The domain is centered over Campania and Lazio regions in southern Italy.



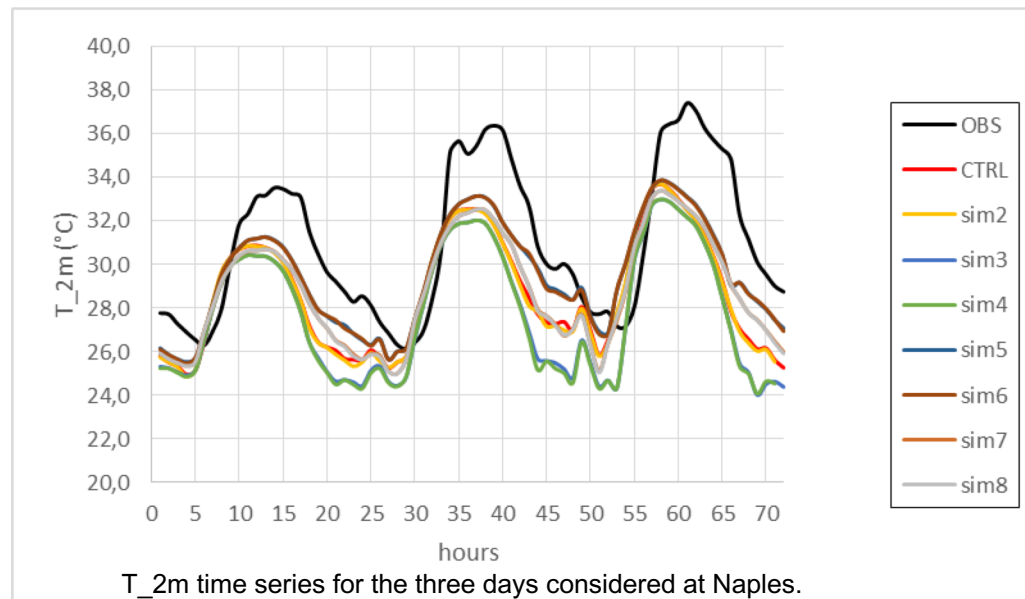
Status of simulations (May 2020)

Version: cosmo_5.05urb6up3

Eight additional simulations have been performed, starting from the reference model configuration CTRL provided by ARPA Piemonte, according with the following scheme:

9 km -> 1 km								
	CTRL	sm2	sm3	sm4	sm5	sm6	sm7	sm8
TERRA_URB	FALSE	FALSE	FALSE	FALSE	TRUE	TRUE	TRUE	TRUE
old_tur	TRUE	TRUE	FALSE	FALSE	TRUE	TRUE	FALSE	FALSE
itype_canopy	1	2	1	2	1	2	1	2

T_2m Naples (urban) for 8-10 Aug 2017



Regarding the minimum T_2m values:

- TERRA_URB = true increases these values (about +1.5°)
- Loldtur = true increases these values (about +1°)
- No changes between itype_canopy 1 and 2, as expected in urban areas

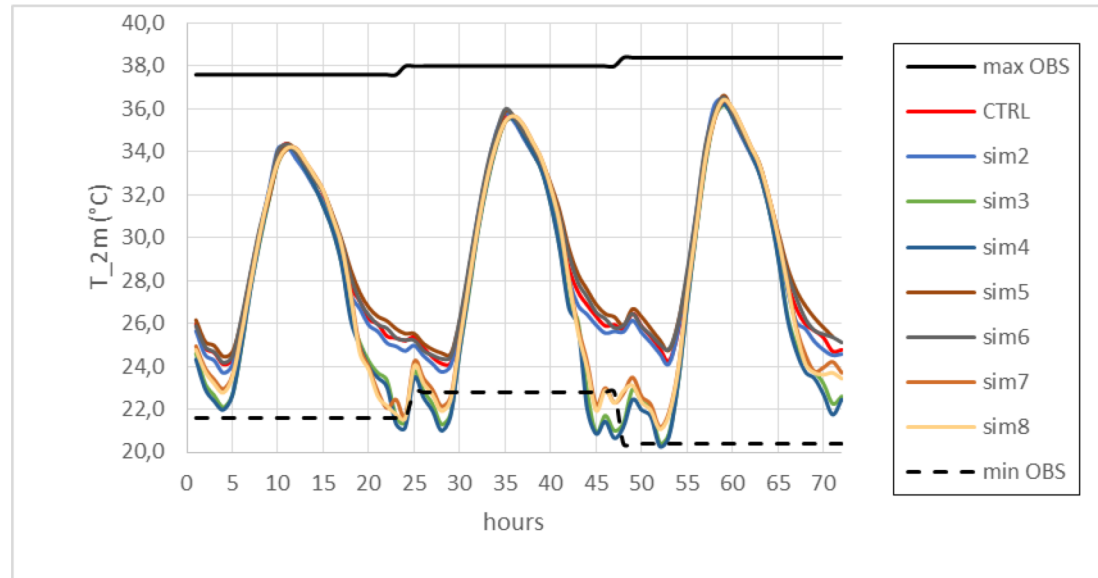
Regarding the maximum T_2m values:

- TERRA_URB = true increases these values (about +0.6°)
- Loldtur = true increases these values (about +0.7°)
- No relevant changes between itype_canopy 1 and 2, as expected in urban areas (> 0.1°)

Employing TERRA_URB = true and Loldtur = true improves general model performances

T_2m Grazzanise (rural), 8-10 Aug 2017

For this rural station, no hourly data are available, but only daily maximum and minimum values.



T_2m time series for the three days considered at Grazzanise.

Regarding the minimum T_2m values:

- TERRA_URB = true increases these values (about +1.°)
- Loldtur = true significantly increases these values (about +5.°)
- itype_canopy = 2 reduces these values (about 0.3°)

Regarding the maximum T_2m values:

- TERRA_URB and Loldtur have limited impact on these values (< 0.1°)
- itype_canopy has no impact on these values.

Outlook

- A more detailed analysis of the results is required.
- Analyses will be performed in collaboration with ARPA P and the other partners, in view of the common publication.
- Observational data at higher resolution will be employed (e.g data provided by https://rp5.ru/Weather_in_the_world), thanks to Mikhail for the suggestion.