

Annual report 2023 for Flagship Pilot Study URB-RCC

Status and progress during the year including scientific highlights (and images if possible), end to end perspective and participants engaged in the project

Main content related updates:

- Continued: Working Groups (WGs) on analysing available datasets (Phase 1 of FPS), for cities in Europe (FPS CP/EUCP dataset on ~2-3km spat. res.) and for cities globally (CORDEX-CORE, ~25km spat. res.).
- Completed: Simulation protocol for STAGE-0 test simulations (Phase 1 of FPS). These test simulations run for case studies within period of 4-5 months and cover a heavy precipitation event and a heat wave, on approx. 12 and 3km spatial resolutions for the region of Paris.
- On-going: STAGE-0 (Phase 2) simulations are underway. Around 20 modelling groups have indicated their interest to contribute with simulations. Some groups have already completed their first simulations and presented initial results at the ICRC-CORDEX side meeting in Trieste.
- On-going: A joint analysis protocol and plan is almost completed. Tomas Halenka's group will lead the main analysis focusing on heat and possibly on the heavy precipitation extremes. Further analyses are expected from sub-groups.

Further updates:

- Peter Hoffmann joined the team of coordinators of the FPS to keep GERICS involved in the leading of the activity after Gaby Langendijk moved to a position in Deltares (we are now three).
- DKRZ granted support for data storage/exchange for the STAGE-0 simulations.
- A strong connection has been established with the EU Horizon I4C project, with some overlap in partners and goals. Both projects cover Paris, and particularly the simulation protocols and domain set-up has been tried to be aligned.
- A connection exists with the EU Horizon FOCI project, of which Tomas Halenka is a coordinator. Particularly mutual interest is found between the projects for topics around modelling interaction air quality and climate within cities.

Summary of each workshop/activity held during the year

<i>Title, date, short description, location, website, links</i>	<i>Responsible person/-s</i>	<i>Funder</i>
FPS Side-Event at ICRC CORDEX, Trieste (Italy), 27 Sept. 2023, Meetings (hereon.de)	Tomas Halenka, Peter Hoffmann, Gaby Langendijk	None
FPS online meetings around STAGE-0 simulations, throughout the year. Topics included: simulation protocol, status & challenges STAGE-0 simulations, analysis protocol	Tomas Halenka, Peter Hoffmann, Gaby Langendijk	None
Urban science session, ICRC-CORDEX, Trieste (Italy), 29 Sept. 2023: Session D6: High resolution urban climate modeling and regional climate change – progress and challenges for CORDEX (online and Trieste) – ICRC-CORDEX2023	Tomas Halenka, Gaby Langendijk	None
Presentation about the FPS was held during the hybrid WMO-GURME annual meeting, held at WMO, 23-24 Nov.	Gaby Langendijk	None
Presentation on the FPS at EMS 2023, 3-8/9. 2023, Bratislava, EMS2023-616 UP2.1 solicited „CORDEX Flagship Pilot Study URB-RCC: Urban Environments and Regional Climate Change“	Tomas Halenka	Horizon Europe FOCI

Poster on the FPS at WCRP Open Science Conference, Kigali, 23.-27/10, 2023 “Urban Environments and Regional Climate Change - CORDEX Flagship Pilot Study URB-RCC”	Tomas Halenka	Horizon Europe FOCI&I4C
Invited lecture at conference Chemical Weather and Chemical Climate 2023, Shanghai, 16.-20/10, 2023 Urban in Changing Climate	Tomas Halenka	Horizon Europe FOCI
Contributions at ICUC 2023, 28/8-1/9, 2023, Sydney, No. 721 „Urban Environments and Regional Climate Change - CORDEX Flagship Pilot Study URB-RCC“ (poster) and No. 450 „Heat in cities across the globe: what can the CORDEX-CORE regional climate model ensemble tell?“ (oral)	Tomas Halenka, Gaby Langendijk	TA CR PERUN
T. Halenka convenor and chair of session JM01a - Recent Advances in Regional Climate Modelling (IAMAS, IACS) at IUGG 2023, 11-20/7, 2023, Berlin, presentation IUGG23-4732: „Urban environments and regional climate change - CORDEX flagship pilot study URB-RCC”	Tomas Halenka	TA CR PERUN

Related publications during the year

<i>Title, journal and link to publication</i>	<i>Author/-s</i>	<i>Date</i>
Towards better understanding the urban environment and its interactions with regional climate change -The WCRP CORDEX Flagship Pilot Study URB-RCC	Langendijk, G.S., Hoffmann, P., Halenka, T.	Submitted to Urban Climate Nov. 2023

Planned activities for next year

<ul style="list-style-type: none"> - Hybrid side-event for the FPS URB-RCC, at the annual EURO-CORDEX GA. - Joint analysis of STAGE-0 simulations. - Completing the WGs work on analysis existing data.
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Any other positive news or stories within your FPS during the year

<ul style="list-style-type: none"> - The STAGE-0 experiment attracted about 20 modelling groups from Asia, Australia, Europe and South America.
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Contact person/-s

Tomas Halenka, Gaby Langendijk, Peter Hoffmann
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Please remember to inform IPOC about news, calls, activities or other information that can be shared with the community during the year! We want to show your work at the website and on social media.

If more space is needed just add rows in the table.

The report is due the 15th of February each year and should be sent to ipoc@cordex.org.