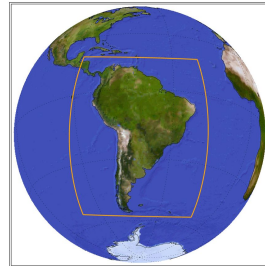




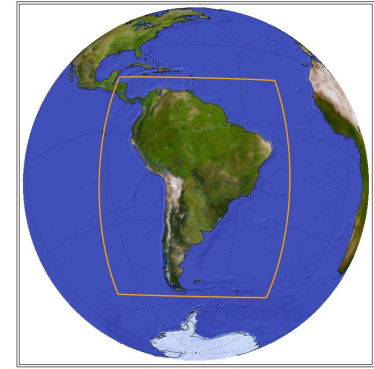
CORDEX-SAM

Rosmeri Porfirio da Rocha and Maria Laura Bettoli
12 May 2026



Activities

- CORDEX-SAM
Agreed on regular discussions on topics of shared interest, including:
 - * regional climate simulations
 - * specific research priorities
 - * collaborative activities
 - * organization of workshops
 - * projects and initiatives
- FPS-ML-SSA
 - * Officially started in November 2025
 - * Develop ML-Emulators of CPRCM



Activities

SAM-12[^]

Colour legend for status: (**planned** **running** **completed** **published**) // source_type: (*unregistered* **ARCM** **AORCM** **ESD**)

	Institution(s)	MOHC	ICTP, <i>USP</i>	IFCA, IDL-FCUL, SENAMHI-PER
	RCM	HadREM3-GA7-05	RegCM5-0	<i>WRF461U</i>
ERA5		evaluation	evaluation	evaluation
EC-Earth3-Veg	r1i1p1f1	hist ssp370	hist ssp370	hist ssp370
MPI-ESM1-2-HR	r1i1p1f1	hist ssp370	hist ssp370	hist ssp370
NorESM2-MM	r1i1p1f1	hist ssp370	hist ssp370	hist ssp370

SAM-25[^]

Colour legend for status: (**planned** **running** **completed** **published**) // source_type: (*unregistered* **ARCM** **AORCM** **ESD**)

	Institution(s)	UNSW-CCRC	UBA-CIMA-IFAECI	SENAMHI-PER
	RCM	CCAM-v2507-SN	<i>RegIPSL</i>	<i>WRF451</i>
ERA5		evaluation	evaluation	evaluation
ACCESS-ESM1-2	r6i1p1f1	hist ssp370		
CNRM-CM6-1	r1i1p1f2			hist ssp585
EC-Earth3	r1i1p1f1	hist ssp370		
EC-Earth3-Veg	r1i1p1f1	hist ssp126 ssp370		
MPI-ESM1-2-HR	r1i1p1f1	hist ssp370	hist ssp370	
NorESM2-MM	r1i1p1f1	hist ssp370		hist ssp245 ssp585

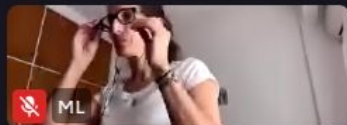
Meeting on 23 April 2026: CORDEX-SAM & CAM



Maria Laura Bettolli



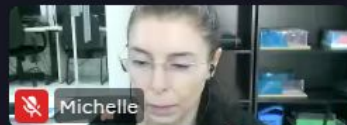
Silvina Solman



ML



Rosmeri




Michelle



Juan Giraldo - COL



Lluís Fita (CIMA-IFAEC...)



Leidinice Silva



Diego Portalanza



Decker Guzman



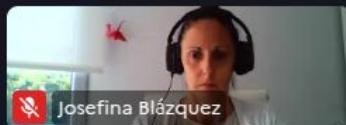
Matías Olmo (BSC)



Rocío Balmaceda



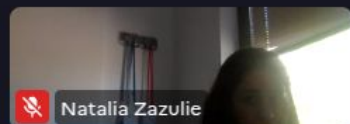
Natália Crespo



Josefina Blázquez



Cristian Martinez-Villa...



Natalia Zazulie



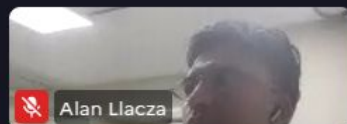
Miguel Lagos-Zúñiga



Alexis Chavez



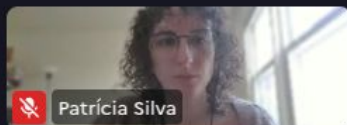
Marcos Benso (USP)



Alan Llacza



Luis Blacutt



Patrícia Silva



Santiago



Paulo Zanin



Chou



Proposed domain-specific topics

→ Climate extremes and compound events*

Matías Olmo (L, BSC, Spain), Lincoln Alves (INPE, Brazil), Marta Llopart, (USP, Brazil) C. Martinez-Villalobos (UAI; Chile), Miguel Lagos-Zúñiga (USM, Chile), Josefina Blázquez (CONICET/FCAG-UNLP, Argentina), María Eugenia Pérez de Mendiola (CONICET/FCAG-UNLP,Argentina), Juan Diego Giraldo (PUJ-Colombia), Limbert Torrez(UdeC, Chile), Daiana Martinez, Santiago Nuñez, Deniz Bozkurt (Universidad de Valparaíso, Chile), Alex Avilés (UC - Ecuador), Juan Rivera (IANIGLA, Argentina), Tereza Cavazos, Everaldo de Souza, Felipe Medeiros, Maria Leidinice da Silva, Ana Maria Pereira Nunes, Natalia Zazulie (ICTP/UBA/CONICET), Cristiano Prestrelo de Oliveira (UFRN, Brasil), David Pareja, Maria Laura Bettolli (UBA/CONICET, Argentina), Rocio Balmaceda Huarte (UNICAN, Spain)

Objective: to study climate projections of extremes in CORDEX-12 and CORDEX-25

- Individual Extremes
- Compound Extremes
- Duration statistics of extremes (e.g., heatwaves, dry spells)
- ETCCDI Indices and region-specific extremes
- CORDEX-25 vs CORDEX-12
- Multi-year drought and megadrought persistence

**Complementary to Cross-domain studies*

Proposed domain-specific topics

→ Contribution of atmospheric systems to heavy precipitation in South America using CORDEX-CORE2

Maria Leidinice da Silva (L, ICTP, Italy), Michelle Reboita, Rosmeri Porfirio da Rocha, Decke Guzman, Ana Maria Pereira Nunes, Miguel Lagos-Zúñiga (USM, Chile), Juan Diego Giraldo (PUJ-Colombia), Natália Crespo, Matías Olmo, Alan Llacza, Cristian Martinez-Villalobos (UAI, Chile), Felipe Medeiros, Everaldo de Souza, Cristiano Prestrelo de Oliveira (UFRN, Brasil), Natalia Zazulie (ICTP/UBA/CONICET), Alex Avilés (UC - Ecuador)

Objective: Use the MOAAP algorithm to track precipitation associated with different atmospheric systems (e.g., MCSs, cyclones, fronts, jets) over South America in climate simulations with varying spatial resolutions.

→ Cyclones*

Michelle Reboita (L, UNIFEI, Brazil), Natália Crespo, Maria Leidinice da Silva, Rosmeri Porfirio da Rocha, Tereza Cavazos

Objective: Cyclones will be identified, and the precipitation associated with these systems will be compared with total precipitation.

**Complementary to Cross-domain studies*

Proposed domain-specific topics

→ Circulation changes / Circulation patterns

Cristiano Prestrelo de Oliveira (L, UFRN, Brasil), Matías Olmo, Daiana Martinez, Cristian Martinez-Villalobos (UAI, Chile), Alejandro Martinez, Limbert Torrez, Deniz Bozkurt (Universidad de Valparaíso, Chile), Tereza Cavazos, Victoria Oruezabal, Ana Maria Pereira Nunes, Jorge Llamocca (SENAMHI, Perú), Maria Laura Bettolli (UBA/CONICET, Argentina)

Objective: to investigate future changes in atmospheric circulation, including both mean climate patterns and variability, using clustering algorithms.

→ Low-level jets in SAM*

Lorenzo Riccetti (L, CONICET/FCAG-UNLP, Argentina), Paulo Zanin, Josefina Blázquez (CONICET/FCAG-UNLP), Ana Maria Pereira Nunes, David Pareja, Maria Laura Bettolli (UBA/CONICET, Argentina)

Objective: to investigate future changes in atmospheric circulation, including both mean climate patterns and variability, using clustering algorithms.

**Complementary to Cross-domain studies*

Proposed domain-specific topics

→ Monsoon*

Luis Blacutt (L, LFA-UMSA-Bolivia), Alan Llacza, Paulo Zanin, Michelle Reboita, Josefina Blázquez (CONICET/FCAG-UNLP), Andy Flores
Objective: evaluation, changes and projections of rainy season onset and demise

**Complementary to Cross-domain studies*

→ Atmospheric Rivers

Limbert Torrez (L, U La Serena, Chile), Deniz Bozkurt (U Valparaíso, Chile), C. Martinez-Villalobos (UAI; Chile), Miguel Lagos-Zúñiga (USM, Chile)

Objective: Objective: to analyze the representation of atmospheric rivers in CORDEX simulations.

→ Representation of hydrometeorological variables over the mountain regions (Andes)

Decker Guzman (L, USP, Brazil), Marcelo Zamuariano, Santiago Nuñez, Alexis Chavez, Natalia Zazulie (ICTP/UBA/CONICET), Juan Rivera (IANIGLA, Argentina), David Pareja, Santiago Mendoza Paz

Objective: To demonstrate the need for higher resolution and special adjustments over regions with complex orography as many andean cities and the supplying catchments, where larger uncertainties remain even in RCMs.

Proposed domain-specific topics

→ Attribution of climate change

Matías Olmo (L), Santiago Nuñez, Deniz Bozkurt (Universidad de Valparaíso, Chile), Natalia Zazulie (ICTP/UBA/CONICET), Juan Rivera (IANIGLA, Argentina)

Objective: Analyse human-induced climate changes among the factors that could enhance the occurrence of extreme events: multi-method and multi-model attribution

→ Sub-daily precipitation extremes and convective organization

Cristian Martinez, Maria Laura Bettoli

Objective: Evaluation and projection of sub-daily precipitation extremes including representation of convective systems, MCS organization, and added value relative to driving GCMs

→ Machine Learning and Emulation of RCM in Subtropical South America

Maria Laura Bettoli (UBA/CONICET, Argentina), Carla Viazzo (UBA/CONICET, Argentina), FPS-ML-SSA Team, Miguel Alvaro, Juan C. Tufino

Objective: First experiment of the FPS-ML-SSA using CORDEX CORE 2 simulations contributing to the CORDEX-ML Bench. Development of region-specific diagnostics for the benchmark.

Proposed domain-specific topics

→ **Changes in Koppen-Geiger classification***

Ana María Nunes (L), Rose, Alex Avilés (UC, Ecuador), Paulo Zanin, Diego Portalanza

Objective: to study future redistribution of climate regimes (Koppen-Geiger classification) across South America

*Complementary to Cross-domain studies

→ **Urban climates**

Natalia Zazulie (L) (ICTP/UBA/CONICET), *Lluís Fita (L)*, Rosmeri Porfírio da Rocha, Ana Maria Pereira Nunes, Jhonatan Bruno (SENAMHI, PE), Diego Portalanza

→ **Elevation-dependent warming**

Limbert Torrez (L), Luis Blacutt (LFA-UMSA-Bolivia), Juan Rivera (IANIGLA, Argentina), Natalia Zazulie (ICTP/UBA/CONICET)

Proposed domain-specific topics: Impacts

→ Impacts in future fire activity

Patrícia S. Silva (L, Yale, US), Marcos Roberto Benso (USP, BR), Jhonatan Bruno (SENAMHI, PE)

→ Impacts of extreme events on agricultural ecosystems

Santiago Vianna Cuadra (L, EMBRAPA, BR), *Diego Portalanza (L)*, Marcos Roberto Benso (USP, BR), Hernán D. Salas (ITM, Colombia), Alejandro Builes-Jaramillo (Colmayor, Colombia),

→ Hydrology modeling under climate change scenarios

Miguel Lagos-Zúñiga (L, USM, Chile), Alejandro Builes-Jaramillo (Colmayor, Colombia), Alexis Chavez, Santiago Mendoza Paz

→ Impacts on cryosphere and glacial hydrology

Alan Llacza, Jhonatan Bruno

Concerns

- Availability of simulations
- Data sharing
- Data access
- Possibility of remote analyses
- Timeline

Thanks for your attention!