VAMOS EXTREMES

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The overall focus is improving our understanding of the Mechanisms and predictability of warm season extremes over the Americas on subseasonal to decadal and longer time scales.

Tasks

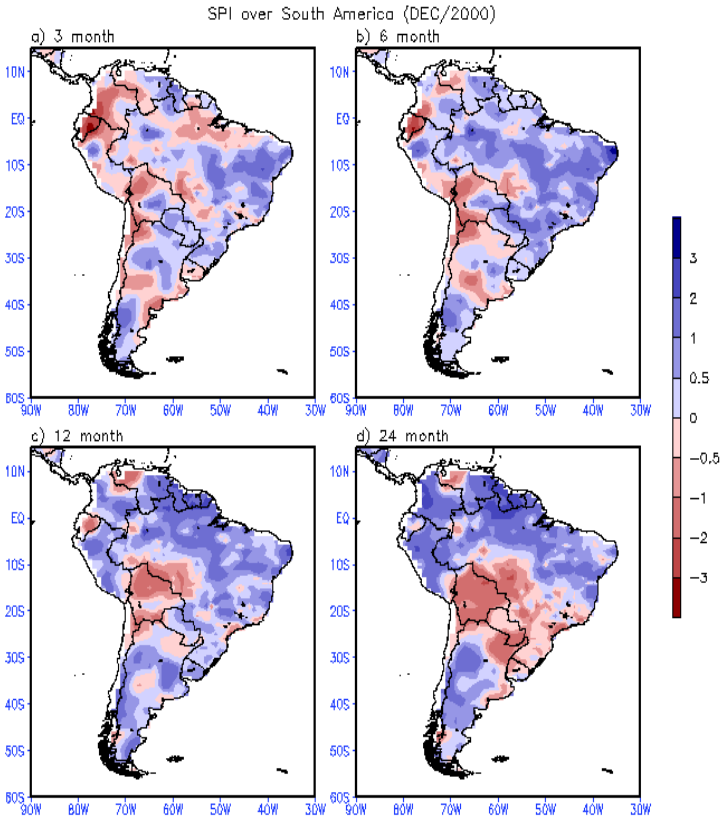
- **Develop atlas of warm-season extremes over the Americas**
  - focus on precipitation extremes (droughts and floods)

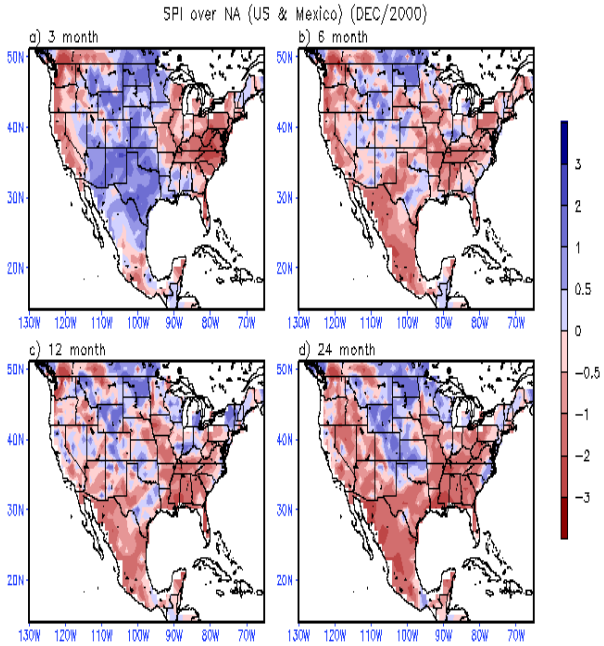
- **Evaluation of existing and planned simulations**
  - CMIP5 IPCC/AR5 global and CLARIS-LPB regional scenarios, decadal hindcasts,
  - Seasonal hindcasts (e.g., NOAA/CFSRR, NASA/GEOS-5)
  - Ultra-high resolution (10-20km) global climate model simulations
    - ICTP Workshop on High Resolution Modeling: http://gmao.gsfc.nasa.gov/pubs/conf/
  - Assess and analyze mechanisms using above atlas and latest high resolution reanalyses (e.g., MERRA, CFSR, ECinterim)

- **Suggest new model simulations to help shed light on the mechanisms and predictability of extremes**
  - Mechanistic experiments examining impacts of SST and MJO on extremes

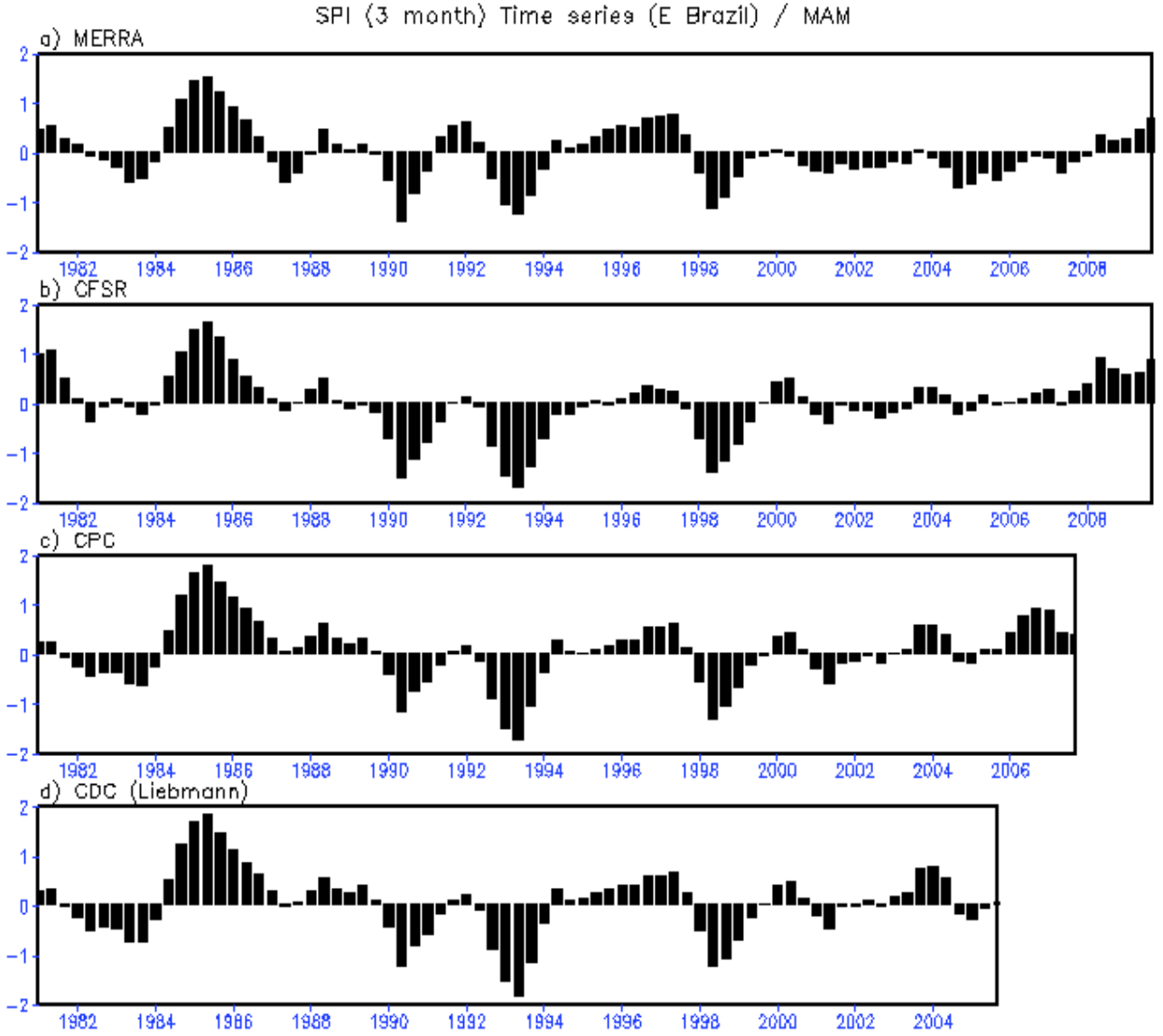
  - Links with CLARIS LPB on extremes

ATLAS- VAMOS EXTREMES
Characterizing extremes for the recent past over the Americas

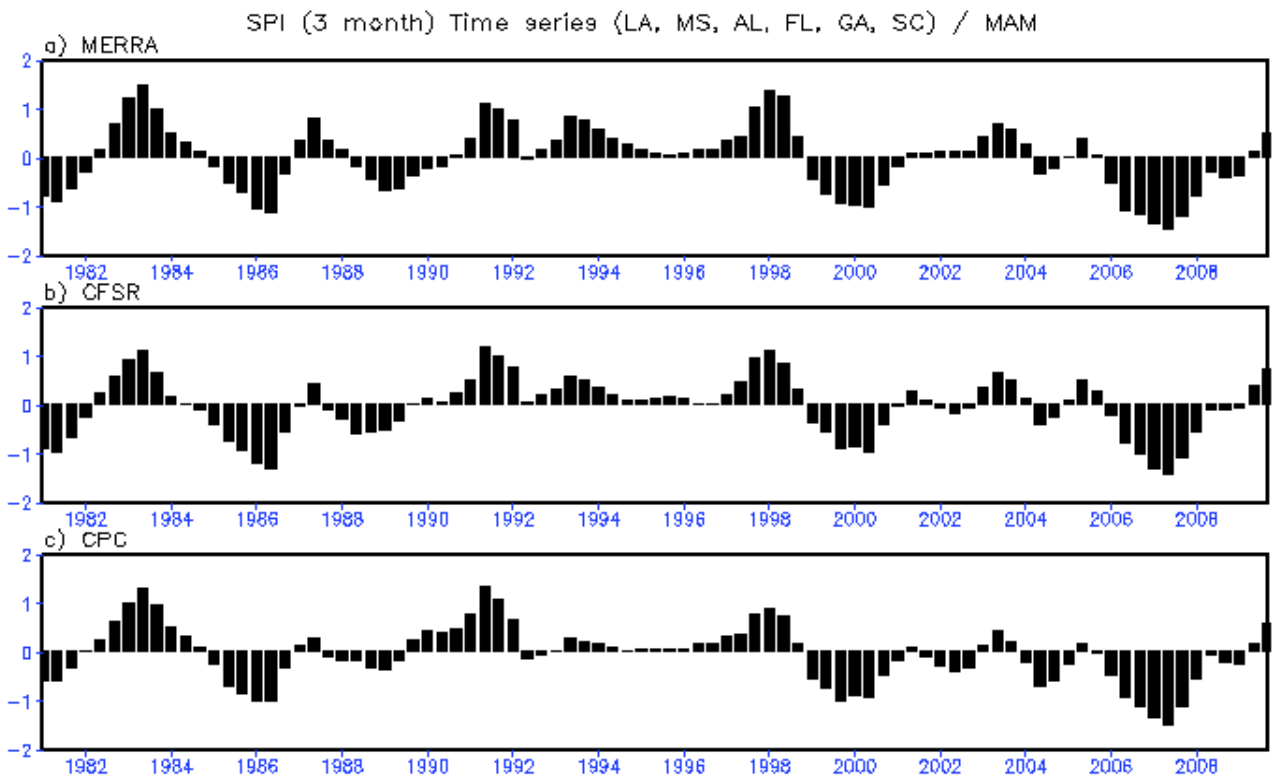




Extremes Eastern Brazil (MAM)



SOUTHEASTERN NORTH AMERICA (MAM)



Coordination of a cluster poster in the Open science conference- Denver- October-2011

PROGRESS IN AMERICAN MONSOON RESEARCH: EXTREMES IN THE AMERICAS- VAMOS /CLIVAR EXTREMES WG

Organization of a session in AGU 2011- San Francisco- December 2011

- **Weather and Climate extremes in the Americas**
- **24 papers- oral and posters**

Papers on extremes from people of the WG

- Liebmann, B., Kiladis, G.N., Allured, D., Vera, C.S., Jones, C., Carvalho, L.M.V., Blade, I., Gonzales, P.L.M., 2011. Mechanisms associated with large daily rainfall events in Northeast Brazil. J. Climate.

- Silva Dias, M.A., Dias, J., Carvalho., L.M.V., Freitas, E.D., Silva Dias, P.L., 2012. Changes in extreme daily rainfall for São Paulo, Brazil. Clim. Changes.

Rusticucci, M. , 2012. Observed and simulated variability of extreme temperature events over South America. Atmospheric Research.

Cavalcanti, IFA, 2012. Large scale and synoptic features associated with extreme precipitation over South America: A review and case studies for the first decade of the 21st century. Atmospheric Research

Atlas –Characterizing extremes in the Americas- Indices and Maps- from observations and reanalyses (precipitation)

- Next : include model results
- temperature

CLARIS LPB
WP6: Processes and future evolution of extreme climate events in La Plata Basin

- End: September 2012
- 2 specific papers on the studies during the project
- Paper on indices of extremes
- Tables and maps with information of precipitation and temperature extremes – from observation and regional models simulations and projections

Some of the proposed activities that were not completed yet:

Analyses of extremes in CMIP5
High resolution global models
Modeling experiments

Specific workshop (with VAMOS meeting ?)
Group meetings (we did a teleconference)

Information from **Siegfried Schubert:** Global Drought Information System (GDIS)

- WCRP drought meeting-in Frascati this year- development of an experimental global system of drought information

- Phase 1- implementation of the system
- Phase 2-pilot studies in several countries
- Phase 3-development of the product deliverable system- global drought portal

What is the Global Drought Information System (GDIS)?

Drought Catalog – encyclopedia of our current understanding of drought worldwide (mechanisms, predictability, historical events, statistics of drought, etc.)

Monitoring and Prediction – includes skill estimates, global and regional products, takes advantage of global and regional capabilities, *regular user feedback*

Living document

On-going real-time activity

Case Studies – international collaboration, high profile recent events, involves users and researchers, drives development and further research

On-going targeted research

What does the GDIS provide?

- Synthesized and integrated drought information on past, current and future drought development over the world.
- It provides direct information on drought based on precipitation (SPI), soil moisture and runoff data (from the Global Land Data Assimilation Systems) to users.
- It networks with users in regional pilot areas. Direct (contact with) involvement of scientists in host countries will provide local information and ground truth of drought
- It provides drought forecasts to improve strategic planning and drought mitigation
- It strengthens the link between research and user needs

Link the VAMOS EXTREMES activities with activities of this GDIS ?