Activities of the focal point of IANAS, 2016

Hugo G. Hidalgo

Two main activities

- Establishing a group to produce the book chapter on water quality

- Organizing the "*Second Workshop on Climate Change, Variability and Modeling over Central America and Mexico | (smr 2839)*"

Book chapter

- Meeting in National Academy of Sciences (August, 2016) with water quality experts:
  - Mr. Rolando Marín León
  - Mr. Clemens Rupert
  - Mr. Francisco Angulo
  - Mr. Guillermo Calvo
  - Mr. Jenaro Acuña
  - Mr. Johan Molina
  - Mrs. Maritza Marín
  - Mrs. Natalia Morales

Existing literature needs to be revised and reviewed

VIGESIMOPRIMER INFORME
ESTADO DE LA NACIÓN EN DESARROLLO
HUMANO SOSTENIBLE

Informe final
Gestión del recurso hídrico y saneamiento en Costa Rica

Investigador:
M.Sc. Francisco Angulo Zamora

Other topics that need review

- Water disinfection
- Organic contaminants (pesticides)
- Arsenic
- Biological tracers
- Etc.

There needs to be a squeleton of the book and a review of literature

- Review of documents (Hugo Hidalgo).
- Francisco Angulo: Water law. State of the resource in relation to other countries in the region
- Maritza Marín: waste water and sanitation
- Need to contact Monika Springer for biological tracers
- Need to contact Laura Arias from Microbiology, University of Costa Rica
- Need to contact Horacio Chamizo, University of Costa Rica (Water and Health).

Workshop at UCR co-sponsored by Academy of Sciences of Costa Rica

ABOUT

- Central America and Mexico are vulnerable regions to extreme climatic events that cause socio-economical and natural disasters. These regions have also been highlighted as some of the most vulnerable to climate change. Recent research within the Coordinated Regional Downscaling Experiment (CORDEX) framework focused over Central America has shown that the use of regional climate models (RCMs) allows for a better representation of local climate features and meso-scale phenomena, such as for example tropical cyclones, when compared with coarser resolution Global Models. Therefore, RCMs can be very valuable tools to study climate change over the region. The main purpose of the workshop will be to provide extensive sessions focused on the analysis of climate variability and climatic change over central America and on the use of the RCMs (and specifically the ICTP model RegCM4) as a tool for studies of climate-related phenomena at high resolution.
- This workshop will include theoretical lectures on climate variability and change over Central America and Mexico, along with tutorial sessions on the use of the RegCM4 model over the region. An important aim for this workshop is to strengthen the community of users of the RegCM4 model in Mexico and Central America. A limited number of participants is envisioned, with proven experience in handling climate data and running climate models (in particular RCMs), and that have interest in using the RegCM4 as a tool for regional climate studies.

CORDEX

Region 2: Central America

Ref: Description of the CORDEX domains
(23/06/2015 version)

A) For rotated polar RCMs (in rotated coordinates):

RotPole (113.98;75.74)
TLC (307.20; 20.68)
Nx=210
Ny=113

B) For non-rotated polar RCMs (in actual coordinates):

TLC (235.74; 28.79)
CNB (286.45; 34.83)
TRC (337.78; 31.40)
CWB (241.11; 4.68)
CPD (287.29; 10.20)
CEB (333.40; 7.10)
BLC (246.10; -19.46)
CSB (288.0; -14.42)
BRC (329.46; -17.23)

Dynamical downscaling contacts:

- Ray Arritt - Iowa State University, USA
rwarritt (at) bruce.agron.iastate.edu
- Tereza Cavazos - CICESE, Mexico
tcavazos (at) cicese.mx

Statistical downscaling contacts:

- Tannecia Stephenson (SAT member) - University of the West Indies, Jamaica
tannecia.stephenson02 (at) uwimona.edu.jm

Workshop

- Venue: University of Costa Rica
- Focused on climate modeling
- 10 international experts
- Around 30 participants from Latin America and Caribbean
- Morning presentations by experts
- Afternoon laboratory sessions
- Final presentations of the participants on the last day (practical exercise using RegCM4 climate model)
- Organized by two members of the Academy: Dr. Jorge Amador and Dr. Hugo Hidalgo

Co-organizers and Sponsors

The Abdus Salam
International Centre
for Theoretical Physics
www.ictp.it

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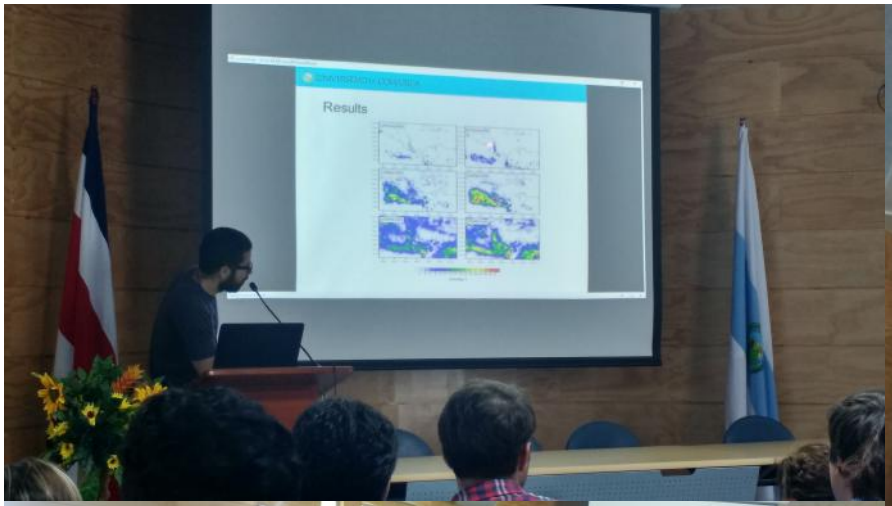
MEXICANOS

Program

Monday (14 November)	Tuesday (15 November)	Wednesday (16 November)	Thursday (17 November)	Friday (18 November)
Welcome and Introduction to RegCM model	**North American Monsoon Session**		**Central America and Mexico Session**	**General Session**
07:45-08:15 Registration	08:15-09:00 Regional climate modeling in Central America, Mexico, and the Caribbean (T. Cavazos)	08:00-13:00 Visit to Irazú (or Poás) Volcán (the former depends on Turrialba Volcán activity)	08:15-09:00 Analysis of mid-summer drought over Mexico and Central America for a 34-year long (1979-2012) RegCM4 simulations. (M. Méndez)	08:15-09:00 Sensitivity of Tropical Cyclones to Resolution, Convection Scheme and Ocean Flux Parameterization over Eastern Tropical Pacific and Tropical North Atlantic Oceans in RegCM4 Model (R. Fuentes-Franco)
08:15-08:45 Welcome **Hugo Hidalgo** (CIGEFI-UCR) **Filippo Giorgi** (ICTP) **Fernando García** (Vice-President for Research, UCR)				
09:00-09:45 Theory and use of Regional Climate Models (**F. Giorgi**)	09:00-09:45 Evaluating changes in extreme events during the North American Monsoon using convective-permitting regional atmospheric modeling (**C. Castro**)		09:00-09:45 Sensitivity of precipitation and atmospheric low-level circulation patterns to domain size in RegCM.v.4.4 over Central America. (**E. Rivera, J. A. Amador, F. Sáenz, and J. J. Vargas**)	09:00-09:45 RecCM model applications to climate analysis, forecasting and future climate projections at University of Sao Paulo (T. Ambrizzi)
09:45-10:30 The ICTP's Regional Climate Model RegCM4 (**F. Giorgi**)	09:45-10:30 **CORDEX and the North American Monsoon: Does domain size matter? (R. Cerezo-Mota)**		09:45-10:30. The patterns of meteorological fields to identify intraseasonal precipitation variability in Central America (K. Lee)	09:45-10:30 **Presentations from participants**
10:30-11:00 **Coffee Break**	10:30-11:00 **Coffee Break**		10:30-11:00 **Coffee Break**	10:30-11:00 **Coffee Break**
11:00-12:30 Introduction to the RegCM4 system (**G. Giuliani**)	11:00-12:30 Regional Climate Model Evaluation System (RCMES) training session (K. Lee)		11:00-11:45 High resolution simulations of present and future climate over Central America and Mexico. (S. Rauscher) 11:45-12:30 Land-atmosphere coupling in the Central America region. (R Arritt)	10:30-12:30 **Presentations from participants**
12:30-13:45 **Lunch**	12:30-13:45 **Lunch**	13:00-13:45 **Lunch**	12:30-13:45 **Lunch**	12:30-13:45 **Lunch**
13:45-16:00 **Laboratory session**	13:45-16:00 **Laboratory session**	13:45-16:00 **Laboratory session**	13:45-16:00 **Laboratory session**	13:45-14:30 **Presentations from participants**
16:00-16:30 **Coffee break**	16:00-16:30 **Coffee break**	16:00-16:30 **Coffee break**	16:00-16:30 **Coffee break**	14:30-15:30 **Closing remarks**
16:30-17:30 **Laboratory session**	16:30-17:30 **Laboratory session**	16:30-17:30 **Laboratory session**	16:30-17:30 **Laboratory session**	

Presentations

Presentations



Field trip