



TROPICAL CYCLONES: CURRENT CHARACTERISTICS AND POTENTIAL CHANGES UNDER A WARMER CLIMATE



161

149 David Raymond, New Mexico Tech, USA

137 D Martinez & I Mitrani, INSMET, Cuba

125 Omar Lizano, CIGEFI, Costa Rica (left project in 2008)

113

102

90

78

66

54

42

30

PhD Students: J. Cisneros, J. Marin, F. Oropeza,

Post-docs: , R. Romero-Centeno, D. Pozo

Mexico

Jorge Zavala & GB Raga, CCA

Luis Farfan, CICESE-La Paz

Orzo Sanchez CICATA

R. Prieto, IMTA

SAT Oct 01 2005 1500 GOES10 VIS (1km)

<http://cabernet.atmosfcu.unam.mx/IAI>



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PROJECT GOALS

- a) *To better understand the factors and processes that influence the intensification of tropical cyclones in the East Pacific, through observations and model simulations.*
- b) *To evaluate which of those factors could be more important under global warming scenario.*
- c) *To evaluate the impact of coastal waves induced by tropical cyclones under global warming scenario.*

PROJECT ACTIVITIES

Data analysis:
Satellite-derived altimetry
From field projects TCSP/IFEX
Case studies using NCEP-GFS

Modeling:
Atmosphere: WRF
Ocean: ROMS for EPAC
Coastal waves and surge

RESULTS

- a) *2 papers published, 3 submitted*
- b) *1 PhD graduated, 2 more within the next year*
- c) *Numerous conference presentations*
- d) *Successful capacity building activities ...*



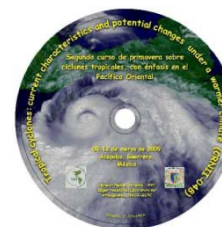
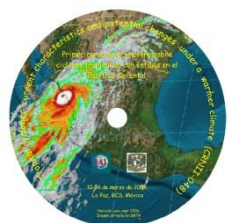
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1. Course on Tropical Meteorology (Tropical Cyclones) at the Universidad de Buenos Aires, July-August 2007
2. First Spring School on Tropical Cyclones (March 2008, La Paz, Baja California S)
3. Second Spring School on Tropical Cyclones (March 2009, Acapulco)
4. Symposium on Human Dimensions of Tropical Cyclones (March 2009, Acapulco)



CAPACITY BUILDING





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COLLABORATIONS

CRNII-050, PI: Kam-biu Liu

His paleo-tempestology work would put in an historical perspective the modern day results from our project. Kam-biu participated in both Spring courses (2008 and 2009)

SMG-HD, PI: Robert Varady

Precipitation associated with landfalling cyclones can present a major threat to the population (e.g. flooding and landslides) but it can also be very positive to communities in which water is scarce (such as in NW Mexico). L. Farfan for our team has interacted closely with their team members. C. Scott participated in the Symposium last March.

UNAM Post-doc: Marcelo Olivera

Non-linear economic model for the relationship between temperature, precipitation and tropical cyclones and the agricultural activities in the region, including several future climate scenarios. Also, the relationship between rainfall associated with land-falling and land-grazing tropical cyclones and dengue in Guerrero.

CIESAS: Social Anthropology

Potential collaboration, PhD student, social aspect of flooding and landslides

Thoughts about synthesis

Difficult to synthesize results from different projects, so what we need to do is to look for common ground on experiences, such as:

- 1. Concrete results of scientific collaborations in the networks: data exchanges*
- 2. Administrative issues: who we can streamline them?*