

**The CLIVAR-VAMOS  
Intra-Americas Seas Study of Climate Processes (IASCLIP) Program**

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In 2009 The Intra-Americas Science Climate Processes Program (IASCLiP) became a CLIVAR VAMOS endorsed program following its establishment in 2007. This newest VAMOS research effort seeks to improve and enhance the observational climate network across the warm water pool region of the Americas as a means to boost the accuracy of operational models and regional climate forecasts. IASCLiP research draws, in part, on previous VAMOS efforts which have focused on the core monsoon systems of both North and South America. The IASCLiP climate system shows distinct teleconnections with both of these monsoon systems which straddle the region. Goals of the program range from early warning systems for extreme weather events to long term climate monitoring. These goals can be achieved through an expansion of the current climate observing network across the region (e.g. proposed monitoring of subsurface temperature on existing surface buoys and expanded GPS precipitable water monitoring from Mexico into the Caribbean). This research program seeks to link modeling and forecasting efforts to climate related societal applications across the 41 nation domain in the Intra American Seas region (IAS). The Prospectus, Monitoring and Modeling plans for IASCLIP can be accessed directly at <http://www.eol.ucar.edu/projects/iasclip/>.

**Objectives and relevance to CLIVAR/WCRP**

IASCLIP is most relevant to, complements and interacts with, the other monsoon programs under the CLIVAR-VAMOS umbrella. By its relevance to the monsoon region in the Sierra Madre Oriental of Mexico, IASCLiP embraces the largely unfulfilled (largest scale) Tier Three domain of NAME which also included the doldrum trough region of Central America and southern Mexico. To the east, IASCLiP is centered on the Atlantic Warm Pool (AWP) with its core region of warm boreal summer SSTs  $> 28^{\circ}\text{C}$ . In part, the climate of the AWP is shown to be linked through the Hadley Circulation to subsidence and boundary layer processes in the SE Pacific (VAMOS/VOCALS). The AWP is shown to be directly linked with ITCZ variability in the Atlantic which also affects rainfall in both the Amazon and northeast Brazil. Outside of VAMOS, IASCLiP — by its nature — shares strong commonality with the CLIVAR's interests in the Atlantic overturning circulation, model assessment, climate prediction, regional drought and enhanced observations/process studies. Many of the scientists on IASCLiP working groups, or otherwise interested in IASCLiP, are also members of the US CLIVAR panels and working groups concerned with these interests. There are also clear links with WCRP GEWEX.

## **Planned Activities**

Core to the program is the Forecast Forum which that was established in 2010 in an effort to evaluate model performance and real time climate forecasting within the IASCLiP domain: [http://waterinstitute.ufl.edu/WorkingGroups/downloads/IASCLIP\\_MAM\\_2012.pdf](http://waterinstitute.ufl.edu/WorkingGroups/downloads/IASCLIP_MAM_2012.pdf).

The forecast forum emphasizes prediction of the aerial extent and strength of the AWP, variability of the boreal summer monsoon/mid summer drought across the IAS and tropical cyclone activity within the region (Caribbean, Gulf of Mexico and tropical East Pacific). Since its establishment, researchers and government agencies within the IAS region have been encouraged to participate and provide feedback to this forecast forum.

With cooperation of various federal and foreign funding agencies, IASCLiP seeks to improve and expand the observational network across the region as a means to improve NCEP operational models. Early warning systems and long term climate monitoring will benefit from the new network. The program seeks to improve our understanding of the seasonal cycle and movement of the ITCZ across the warm water pool and nearby continents.

Emphasis is placed on understanding the transition of the monsoon systems between South and North America and associated teleconnections. The program seeks to improve our comprehension and prediction of major weather events and climate extremes within the region:

- A. Intraseasonal to decadal fluctuations in TC frequency, intensity and point of TC landfall.
- B. Flood events (ITCZ, TC, and frontal induced).
- C. Regional droughts (mid summer drought).
- D. Historical data base development is crucial to establishing benchmarks for climate extremes and return intervals of extreme weather events and persistent climate modes. Understanding the impacts from the AMO, NAO, PDO and ENSO require high quality long term data sets from the region.