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WEATHER@HOME Mexico: First attribution study in Mexico

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As part of the RECLIM-UK (Regional Climate Projections Initiative Mexico – UK) project, we are investigating the influence of the anthropogenic activity on the anomalous winter season over the northwest of Mexico and the anomalous wet summer 2005 over the southeast of Mexico.
Winter 2004 was a very wet winter in California and in the core of the North America Monsoon (NAM) region – the 2nd wettest in the last 30 years, whereas summer 2005 was one of the driest monsoon seasons in Mexico, with very few hurricanes in the Eastern Pacific.
On the other hand, in the Atlantic, the summer of 2005 registered the most active hurricane season, with 15 hurricanes (the mean for this basin is 6 hurricanes per year), 7 of them reaching major hurricane category. Wilma, made landfall in Cancún causing structure losses in Cancún estimated at between $2 to $5 billion dollars.
Hurricane Stan produced heavy rainfall events in Veracruz and flash floods in large parts of the south of México and Central America. The continuous passage of the tropical cyclonic systems during 2005 on the Gulf of Mexico translated into one of the wettest years in Veracruz and in the last 30 years. Hurricane Katrina made landfall in the east coast of USA, producing claim insurance losses estimated at $71 billion dollars. The total losses of that year after the passage of Katrina, Rita and Wilma were estimated at $117 billion dollars.
The oceanic-atmospheric system during the winter of 2004 were those of a very weak El Niño and during the summer of 2005 those of a very weak La Niña, therefore ENSO (El Niño Southern Oscillation) does not explain per se the extreme rainfalls over the monsoon region during the winter, nor the intensity and number of hurricanes over the Atlantic in summer 2005. Hence we want to investigate the role of the anthropogenic activity on this particular period.
In this paper, we will be presenting the preliminaries results derived from the hundredths of simulations done for this specific experiment.