

Prediction of the eastern equatorial Pacific SST for the summer 2007 and its impacts in rains over the northern Peruvian coast

Y. Silva (1), G. Trasmonte (1) and R. Woodman (1)

(1) Instituto Geofísico del Perú [yamina@chavin.igp.gob.pe/+51 1 3172327]

The relationship between anomalously high Sea Surface Temperature (SST) in the eastern equatorial Pacific and extreme precipitation in the northern coast of Peru is well known. The SST near the northern Peruvian coast is a good predictor for rain in Piura between January and April, when disastrous rain occur during the anomalous warming event (Woodman, 2005). So it might be posible to forecast rains in function of SST. Unfortunately, numerical climate predictions of SST for the eastern Pacific are still not good enough, due to the very high complexity of the processes in this area which are not well reproduced by models. For example, there is a poor representation of the equatorial and coastal upwelling.

In this study, we present a different approach for reducing the uncertainties of the SST predictions for the eastern Pacific (El Niño 1+2 area, 90°W - $80^{\circ}\text{W}/0^{\circ}$ - 10°S), by various numerical and statistical international models (CFS model, SST consolidated from CPC and IRI's SST consolidated), incorporating complementary statistical methods (regression and analogies) to reduce uncertainties. We will analyze the prediction of SST made at IGP and the observed conditions between November 2006 and February 2007 and quantify the skill of the predictions, which could be added as weight factors for future predictions. Finally, the possible impacts in rains at Piura and Tumbes will be also analyzed.

References: Woodman, R., 2005. Modelo Estadístico de Pronóstico de las Precipitaciones en la Costa Norte del Perú. Sociedad Geológica del Perú, volumen jubilar N. 6 en homenaje al Ing. Alberto Giesecke, p. 25-34.