

Atmospheric circulation associated to dry and rainy periods over the Mantaro basin (Central Peruvian Andes)

Y. Silva (1) and **K. Takahashi** (2)

(1) Instituto Geofísico del Perú, (2) University of Washington [yamina@chavin.igp.gob.pe/+51 1 3172327]

The Mantaro basin, located in the central Andes of Peru, has a great socio-economic importance. Its exceptional climatic and physiographic characteristics have allowed the installation of hydroelectric power station that supplies approximately with 35% of the energy of the country. On the other hand, the Mantaro valley is also an important agricultural centre, whose production supplies mostly the city capital. These aspects have motivated the development of research projects to understand the climatic characteristics of the region, their relation with atmospheric patterns on global scale and the possible effects associated with global climate change. The water resource for the Mantaro basin comes mostly from the rain during the wet season, between September to April, which is also when the agricultural activities are developed. The interannual precipitation variability is one of the most important issues for the farmers and for the hydroelectric sector. The main objective of this paper is to identify the behavior of the atmospheric circulation in anomalously wet or dry rainy seasons.

We analyzed the anomalies in atmospheric variables and SST, using the NCEP/NCAR Reanalysis and the Reynolds OI, during the peak of the rainy season (summer, January-March). The analysis of the atmospheric variables was made at low (850 mb), middle (500 mb) and upper (200 mb) levels of the atmosphere. The preliminary results show that during rainy periods, the southeast Pacific anticyclone is more intense and its center is located at 40S, 100W and, in the middle-eastern south America, a low-level anticyclonic anomaly is observed, which could favour the entry of humidity from the Atlantic towards the Amazon. In the middle level the anticyclonic anomaly persists in the middle-eastern part of the continent extending towards the Atlantic. In addition, a cyclonic anomaly is observed in the northeast of the continent. In upper levels, the Bolivian High is displaced towards the southwest during the rainy periods and towards to the northeast in the dry periods.