

Interannual Variability of the North American Monsoon: Large-Scale Forcing and Small-Scale Effects

Leslie M. Hartten (1,2) and McArthur Jones, Jr. (3,4)

(1) Cooperative Institute for Research in Environmental Sciences (CIRES),
University of Colorado, Boulder, Colorado

(2) NOAA Aeronomy Laboratory, Boulder, Colorado

(3) UCAR/SOARS, Boulder Colorado

(4) Dept. of Earth Sciences, Millersville University, Millersville, Pennsylvania

The North American Monsoon (NAM) is a major factor in the weather over the southwestern United States and northwestern Mexico. Atmospheric general circulation models have difficulty predicting the precipitation observed with the NAM, possibly due to the inability of the models to correctly simulate the daily cycle of winds in this region. High-resolution observations collected as part of the North American Monsoon Experiment have allowed us to examine the daily cycle of winds along the Gulf of California during three successive monsoon seasons. Here we document the interannual variability of both the mean flow and the daily cycle of winds at Estaci3n Obispo, and attempt to relate them to both large-scale atmospheric conditions and local precipitation patterns.