Geophysical Research Abstracts
Vol. 14, EGU2012-1265, 2012
EGU General Assembly 2012

Relationship between PDO and basin-scale ocean circulation variations

C. Jiang, G. Lagerloef, and S. Springer
United States (chjiang@ucsd.edu), Earth & Space Research, Seattle

Pacific Decadal Oscillation (PDO), a long-lived El Niño-like pattern of Pacific climate variability, has significant impacts on the water resources and fisheries in the western U.S. and Canada. A satellite sea surface height (SSH) index was found to be a more robust indicator of the PDO state than the sea surface temperature (SST) index in the North Pacific. To understand the relationship between PDO and the basin-scale ocean circulation variations, we examined the evolution of the large scale ocean circulation associated with PDO by regressing direct measurements of surface currents from satellite altimeter and vector wind data against the SSH PDO index. Particularly, we separated the geostrophic and ageostrophic (Ekman) currents to examine their relative contribution in the decadal SSH variability. The lead and lag relations between ocean currents and the SSH PDO index were also quantified to assess the predictive skill of the large scale ocean currents in the climate PDO signal.