IUGG 2003
Abstract Information

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Abstract Information

Abstract Number	2
Abstract Title	COMPARATIVE STATISTICAL ANALYSIS OF SSH VARIABILITY IN TROPICAL PACIFIC USING OCM AND T/P ALTIMETER DATA FOR 10 YEARS OF T/P MISSION.
Presentation Style	ORAL

Abstract Submission

Speaker	Primary Author

Abstract Body Preview

Using numerical output from the high resolution Regional Ocean Model and a full series of Topex/Poseidon observations, we compare basic statistical characteristics of SSH variability in the equatorial Pacific region between 20 N and 20 S as predicted by the model and observed by the altimeter. The focus is on the zonal and meridional distributions of low-frequency variability for timescales from semi-annual to interannual. The ocean variability is analyzed seprately for four frequency bands with scales 0.5 year, 1 year, 1.5 year and 2.3-4.5 years. Meridional profiles of SSH variance on these timescales are analyzed and individual dynamical components of the variability quantified using the wavenumber-frequency spectra of SSH spatial-temporal variations. The four frequency bands are shown to account for about 63 percent of the total SSH variance. We find in particular that wave-related variations on annual timescales account for about 33% of the total, whereis the semiannual wave-type oscillations contribute only about 4 percent. In agreement with the previous findings, the variability is dominated by steric-type oscillations whose spatial scales are comparable with the zonal extent of the area. However, we also find that intermittently occuring very large-scale equatorial eddies yield an appreciable fraction of the total energy. The meridional structure of oscillations is of particular interest, and we have managed to obtain an unprecedently detailed distribution of the energy across and along the equator for each type and timescale of oceanic motions. Both agreements and descrepancies between the model output and the observed variability are highly instructive and pose important questions regarding the ability of the numerical model to reproduce the actual physical phenomena.

Symposium or Workshop (First Preference)

Symposium or Workshop (First Preference)	JSM01