



Variability in Sea Surface Height: A Qualitative Measure for the Meridional Overturning in the North Atlantic

By Sirpa Hakkinen

Bibliogov, United States, 2013. Paperback. Book Condition: New. 246 x 189 mm. Language: English . Brand New Book ***** Print on Demand *****.Sea surface height (SSH) from altimeter observations from 1992 on and from modeling results is investigated to determine the modes of variability and the linkages to the state of oceanic circulation in the North Atlantic. First the altimeter and model simulated SSH are analyzed using the empirical orthogonal function (EOF) analysis. They are found to share a similar leading mode where the center of action is along the Gulf Stream and North Atlantic Current with opposite sign anomalies in the subpolar gyre and in the slope waters along the Eastern Seaboard. The time series of the leading EOF mode from the altimeter data shows that between winters of 1995 and 1996, SSH over the Gulf Stream decreased by about 12cm which change is reproduced by the model simulation. Based on the relationship from the model simulations between the time series of the SSH EOF1 and meridional heat transport, it is suggested that associated with this SSH change in 1995-96, the overturning has slowed down from its heights in the early 90 s. Furthermore, it is shown that decadal...



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