



## Abstract View

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# Estimates from Altimeter Data of Barotropic Rossby Waves in the Northwestern Atlantic Ocean

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### ABSTRACT

A dynamical model representing linear barotropic Rossby waves is combined with GEOSAT data from the northwest Atlantic Ocean. The model is too simple to be very realistic in this complex area, but the problem of combining any model with real data raises a number of issues that we address. The combination method used is sequential estimation in the form of a filtering-smoothing operation. A fraction of the total signal variance (5% to 15%) in the area over several spacecraft repeat cycles is demonstrated to be consistent with five Rossby waves. That the result is robust is demonstrated by recovering known signals added synthetically to the real data.

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