

1. Introduction

Since the 1960's, world general circulation models of the ocean have been developed for the purpose of simulation of the climatological general circulation and SST pattern. On the other hand, basin scale models that were started from barotropic models in the 1960's are mainly intended for the study of simple dynamics with nonlinear effects. Recent increase of scientific interest in dynamic and thermodynamic mechanisms for the long term variation of the upper general circulation has led to more sophisticated basin-scale level models which explicitly deal with thermodynamic processes.

The purpose of the present report is the full description of the idealized and useful numerical model for the study of variation of the general circulation of the upper ocean. After introducing the model, a series of response experiments to the anomalous wind stresses will be described in detail.