

# Pacific Ocean State Estimation and Clarification of Mechanism of Ocean Circulation by Data Synthesis of Global Observations

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Our aim is to synthesize pre-existing ocean data with newly-acquired turbulence data using state-of-art assimilation technique. Available observations of turbulence strength in the ocean, will be “blended” with pre-existing ocean data applying dynamically self-consistent state estimation approach with 4D-VAR adjoint system. We propose some new techniques and schemes to assimilate turbulence data, which tends to include unique features. The obtained state estimation will provide improved description of ocean circulation, its heat and salt transports, and oceanic ecosystem at lower trophic level.

Keywords: OMIX, ocean , mixing , data assimilation