

## Air-sea flux observation by unmanned autonomous sea surface vehicle in the Tropics - Application of the Wave Glider -

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Air-sea fluxes of heat and momentum are fundamental variables for the ocean and atmosphere interaction, which influence weather and climate. The air-sea flux measurements; actually measurements of air temperature, humidity, sea surface temperature, winds, and radiations, are mainly conducted by research vessels, mooring buoys, and satellites. Based on these measurements, many types of global air-sea flux products are produced. However, these products still remain large biases and uncertainties in the global fields. Reducing inaccuracies in air-sea fluxes is important for improving long-term weather and climate predictions. For that purpose, we should consider about intensification of *in situ* measurements, which contribute to improve bulk algorithms, to understand mechanisms of flux variability, and to validate the products as proposed in Community White Papers of air-sea fluxes with a focus on heat and momentum in OceanObs' 19. Due to the relatively high cost of research vessel and mooring buoy operations, number of *in situ* measurements is limited. The sparsity of the *in situ* measurement in present situation is one of obstacles to improve satellite algorithm development and product validation. Because of recent progress of unmanned autonomous ocean surface vehicles (UAVs) development, we can use these vehicles as a platform for air-sea flux observation. In this study, several field tests and evaluations of the acquired data through comparison with mooring buoys have been conducted especially in the tropical region. The present status of these activities will be introduced in the presentation.

Keywords: Air-sea flux, unmanned autonomous vehicle, Wave Glider