



## **A data-derived forecast model of surface circulation based on statistical forcing-response decomposition techniques**

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This paper presents a data-derived surface current forecast model based on statistical decomposition techniques [Kim et al 2010] on the observations of high-frequency radar-derived surface currents, local winds, and sea surface height anomalies (SSHA) off southern San Diego. The regional surface circulation mainly consists of tide-, wind-, and low-frequency pressure gradient-coherent components, which leads us to use tidal harmonic analysis, response functions using wind stress and pressure gradients, autoregressive analysis for residual components in the forecast model. These basis functions have been consecutively added, and the performance of corresponding forecast models is evaluated.