APPLICATION OF ENSEMBLE KALMAN FILTER
METHOD TO ESTIMATE NON LINEAR WAVE VELOCITY AND HEIGHT AT THE BEACH

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ABSTRACT
Ocean waves has become a major concern in the historical record. However, knowledge about the mechanism of wave formation and how the traveling wave in the ocean is still not perfect until now. This is partly due to observational characteristics of the waves in the ocean is difficult and because the mathematical models of wave behavior based on the dynamics of an ideal, and in fact the state of ocean waters are not entirely ideal. Estimated speed and wave height on the beach is also considered very necessary. Because the beach is the boundary between marine and terrestrial life. Therefore, in this final project applied the method Ensemble Kalman Filter (EnKF) to estimate the speed and wave height on a non-linear long wave equation. This method was chosen because it can be used to linear and non linear dynamics equation. After that, do a linear interpolation to obtain the velocity and height at the points connecting the coastline but are not included in the initial observation point.

Keywords : Non Linear wave, Estimation, Ensemble Kalman Filter (EnKF), Interpolasi Linear.