Abstract

This work presents a shallow water ambient noise analysis and modeling effort in the Arabian Sea. Real ambient noise recording at very shallow depths has been analyzed for two environmentally unique periods when the sound velocity profile and the wind conditions present distinct characteristics. Ambient noise data were collected for January and March in the shallow water of Arabian Sea between the wind speed 0.0 m/s to 4.11 m/s. The relative spectral energy distribution of sea noise is presented for a number of wind speeds. Linear relationship between the sea noise spectrum levels and the wind speed were found for the entire frequency range, but the slope were frequency dependent. The results of empirical fitting based on the analysis were used for noise level prediction and the model predictions were compared with the measured noise level. Such study post extensive validation has the potential to develop predictive models for ambient noise estimation based on recorded data.

Index Terms

Computer Science

Signal Processing

Keywords

Shallow water, ambient noise, sea, noise analysis, Arabian sea.