

A novel sea clutter suppression method based on SVD-FRFT at low SCR

Qingyun Cheng¹, Xiaochuan Wu¹, Xin Zhang¹, and Qiang Yang¹

¹Harbin Institute of Technology

May 31, 2023

Abstract

The target and sea clutter Doppler domains frequently overlap due to the frequent passage of slow ship targets through the sea clutter zone. In this letter, a novel sea clutter suppression method is suggested as a solution to this issue, whose key is a novel singular value zeroing criterion guided by the search results of two-dimensional spectral peaks. Verified by simulations, the method proposed can improve signal-to-clutter ratio (SCR) from -8 dB to 41 dB in the frequency domain and be more effective than the conventional SVD-FRFT method in[7] and improved SVD-FRFT method in[8] .

Hosted file

A novel sea clutter suppression method based on SVD-FRFT at low SCR .docx available at <https://authorea.com/users/623981/articles/646499-a-novel-sea-clutter-suppression-method-based-on-svd-frft-at-low-scr>