

Maritime radar: a review on techniques for small vessels detection

ABSTRACT

Maritime radar is an essential technology for observation and tracking systems in various marine applications. In comparison with terrestrial radar systems, maritime radar faces the challenge of large clutter signals, contributed by sea waves. This problem becomes more critical when the system is detecting relatively small vessels, where the probability of detection is reduced due to small radar cross section (RCS) of the vessels themselves. This paper presents a review of recent techniques in maritime radar, developed to overcome this issue, discussing several aspects such as (i) system topology, (ii) radar waveforms, and (iii) detection algorithms. Considering the recent works in this area, several recommendations for future works are presented to further improve the performance of modern maritime radar detecting small vessels.

Keyword: Review; Maritime; Marine; Radar