



Research Letters in Signal Processing

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Research Letter

Bearing and Range Estimation Algorithm for Buried Object in Underwater Acoustics

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Abstract

A new algorithm which associates (Multiple Signal Classification) MUSIC with acoustic scattering model for bearing and range estimation is proposed. This algorithm takes into account the reflection and the refraction of wave in the interface of water-sediment in underwater acoustics. A new directional vector, which contains the Direction-Of-Arrival (DOA) of objects and objects-sensors distances, is used in MUSIC algorithm instead of classical model. The influence of the depth of buried objects is discussed. Finally, the numerical results are given in the case of buried cylindrical shells.