

عنوان مقاله:

Ship Recognition by using Underwater Radiated Noise of Them

محل انتشار:

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خلاصه مقاله:

Underwater-radiated noise of ships in the sea has some information about their machineries. This information can be used to recognize them. It is a difficult task to recognize ships by underwater-radiated sound due to there are many changes in sea's environment, special characteristics of sound transmission channels in underwater and interference-wave in sea's environment. One of the most important approaches in ships recognition by underwater-radiated sound is extracting individual features from the underwater sound of ships, which is an attracting subject for researchers. Suggesting an algorithm for ships recognition by their underwater-radiated noise is the main target of this paper. This algorithm is based on short-time Fourier transform. In this paper, we use adding spectrums respectively, which are obtained from segmentation of input signal and form a binary image to extract features. Extracted features are given to the input of neural network. Then the kind of ship will be determined. Different experiments have been done on a database of acoustic signals of ships. This database consists of the 20 acoustic signals of heavy ship, 10 acoustic signals of boat, and 60 acoustic signals of average ship, which presented in five classes. The correct recognition rate in these five classes is 93.1 percentages with SNR=10dB and it is 96.6 percentages in without noise condition. The suggested algorithm has two considerable advantages, most noise immunity and high performance recognition with least, just 11, features

کلمات کلیدی:

Classifier; H Matrix; Underwater Radiated Noise; Short Time Fourier Transform

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