The Research Of Polarization Filtering Method For Increasing The Signal-to-Noise Ratio Of Seismic Data Caused By Moving Ship

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Introduce
For the reason of complex ocean environment, the method of traditional theory based on spectrum analyze and wave filtering method usually cannot obtain ideality results. So a new method is need for increase the SNR of the seismic wave caused by moving ship.

Method
● Analyze of Polarization: For a three-component data, use the method polarization analyze can obtain the coefficient of polarization.
● The Filter: The coefficient of polarization was used to design the filter, the signal which offset the expected direction can be pressed, so the different fields of the wave are separated.

Result
Used the method of polarization filter, the data for a merchant ship which is obtained by three-component seismometer located on the seabed is analyzed, the SNR is increased obviously and the useful information of low frequency is remained.

Discussion and Conclusions
For the research of seismic wave caused by moving ship, the polarization filtering is a useful method for separated the nonpolarized noise from the signal, at the same time the useful signal is remained.