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Geoacoustic Inversion Based on a Vector Hydrophone Array

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Vector sensor has attracted much attention in recent years. However, there are few papers involving in geoacoustic inversion from vector sensor. In this research, a geoacoustic inversion scheme employing a vector hydrophone array has been developed based on the fact that vector hydrophone can provide more acoustic field information than traditional pressure hydrophones. The inversion scheme is the combination of the Matched Field Processing and the difference of transmission losses between pressure and velocity. The advantages of this method are that it can decrease the uncertainty of the inverted sediment sound speed and the inversion of the sediment attenuation is independent on the source level. [Work supported by the National Natural Science Foundation of China under Grand No. 10574136].