

Application of Data Reconstruction Techniques Based on Compressive Sensing in Onshore Acquisition

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Abstract

In 2013, BGP conducted a 3Donshore seismic survey project in Liaohe Oilfield Company of PetroChina, which had lots of offset and skip shot points due to the limited surface conditions. In order to verify the effect of the data regularization approach, we first chose half of the shot points from the raw data in two ways: a) choosing every other SP regularly; b) extract half of the SPs randomly; and then the compressive sensing theory based data regularization algorithm was used to restore and reconstruct the incomplete seismic data. The comparison of the CMP gathers and PSTM sections demonstrates that the use of the data reconstruction algorithm can obtain a result similar to imaging quality of the raw data.