

Optimum design of 3-D geometry for minimizing acquisition footprint

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Summary

To have a reliable interpretation, geologists need reliable seismic information. The acquisition footprint caused by 3-D geometry gains more and more attention from geoscientists. This paper first analyzes the influence on acquisition footprint due to 3-D geometry parameters such as receiver line interval (RLI), shot line interval (SLI), cross-line roll distance, different patterns of geometry and different depths of targets through building up an ideal model and then clarifies the direction of efforts to minimize the acquisition footprint through designing of 3-D geometry. Secondly, the paper proposes optimal 3-D geometry design compromising the field acquisition cost and acquisition footprint without sacrificing geologic target.