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Articles

# Land Seismic Acquisition Repeatability for Time-Lapse Monitoring of CO2 Sequestration

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Despite differences in the frequency content and phase of the signal generated by these two sources, and positioning differences for source and receiver locations of up to 1m, almost identical stacked sections were obtained after phase matching and scaling of the two datasets. Far greater differences in total energy, frequency content and phase of the signal were observed between the two vibroseis lines recorded at different times of the year (wet and dry periods).

Our results clearly demonstrate that near surface conditions has a first order effect on repeatability of land seismic surveys. A common belief that deployment of the same seismic source and positioning errors are crucial for successful time-lapse seismic needs to be reexamined in light of our results, which show that these factors are of secondary importance when it comes to land seismic surveys.

Technical Area: Time-lapse/CO2 sequestration, Seismic acquisition

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