



## **Passive seismic ambient noise correlation: an example from the Ketzin experimental CO<sub>2</sub> storage site, Germany**

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Passive seismic ambient noise correlation is a new potential tool for monitoring of carbon dioxide storage sites. Unlike expensive conventional monitoring tools, such as time-lapse active seismic surveys, the passive seismic ambient noise correlation method is a relative low cost method and can be performed together with microseismic and reservoir monitoring. In this study, we test the method at the Ketzin CO<sub>2</sub> storage site, Germany. A new passive seismic survey was performed in August 2013 together with an active survey in conjunction with a source test. The survey consisted of two profiles, Line 1 and Line 2. Line 1 contains 42 10 Hz geophones spaced at 24 m intervals and Line 2 contains 23 DSU3 (3 component MEMS) spaced at 5 m intervals. In total, 6 nights and 3 daytime series of ambient noise data were recorded. First, we applied autocorrelation to the passive data records to reconstruct the reflection response. The results show good structural correlation with a stacked section from the active data. Then we used passive seismic interferometry to reconstruct common shot gathers for each receiver location. We only observed surface waves in some retrieved gathers from Line 1. However, for Line 2 we also observed refracted and reflected waves in some retrieved shot gathers. In this presentation we will review ambient noise correlation methods and compare our results with active seismic data.