



AVO studies in Ketzin to discriminate fluid saturation and pore pressure related changes in 3D time-lapse data

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3D time-lapse seismic data were acquired at the Ketzin pilot CO₂ storage site (a baseline (2005) and two repeat surveys (2009, 2012)). The CO₂ injection started in 2008. Over 60 ktons of CO₂ have been injected into a heterogeneous sandstones reservoir (saline aquifer) at a 650 m depth.

Surface seismic can monitor CO₂ at the Ketzin site. The time-lapse seismic signature has been interpreted as an anomaly caused by fluid saturation- related changes only. But CO₂ injection must always decrease effective or differential reservoir pressure, because CO₂ is injected at higher pressure than the original formation pore fluid pressure. We used AVO methods of Juhling&Young (1993) and Landro (2001) to discriminate between CO₂-saturation- and pore-pressure- related effects in 3D time-lapse seismic data from Ketzin.