

Interferometric analysis of passive seismic in north Texas

1. Introduction:

Interferometry is a passive seismic method of analysis that can model velocities near the surface. An interferometric diagram is calculated through the cross-correlation and stacking of large amounts of ambient seismic noise to approximate the lag time between two recievers. An advantage to interferometry is that it does not use an active source as a signal. Grechka et al. (2013) has also applied interferometry to passive seismic data obtained during hydraulic fracturing. I would like to apply interferometric methods to a set of data located in northern Texas that was provided by Nodal Seismic, LLC following the process outlined in Bensen et al. (2007).

2. Regional geology:

The study area is located in the Fort Worth Basin in northern Texas. The basin was formed when Ouachita Thrust Belt was pushed into North America. The Fort Worth Basin's northern end is characterized by the Red River and Muenster arches, its west boundary includes the Bend and Concho arch, and extends southerly to the Llano Uplift (Pollastro et al., 2006).



Figure 1. Stratigraphic column of the Bend Arch (Bensen et al., 2007)



References

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