

# The LOSS Stack, How to Find What You Have Been Missing

Keith Edwards\*

Berkana Energy Corp., Calgary, AB, Canada  
kedwards@berkanaenergy.com

and

Al Bradshaw

Earth Signal Seismic Processing

## Purpose and Methodology

In recent years, our industry has recognized the need to examine seismic data before it is stacked. There are many reasons for this desire. A geophysicist may wish to hunt for hydrocarbon indicators with AVO, or she may simply want to see if there are multiples or normal moveout problems. While we all have recognized this need, we also are limited by time and technology. In practice, pre-stack data is still rarely examined by the interpreter. The LOSS stack was designed to be a scoping tool to help a geophysicist narrow his focus to few areas of interest.

The concept is simple: find a way to quantify how much data does not stack. The implementation is also straightforward.

Step 1: Subtract the stacked trace from each trace in a CDP

Step 2: Calculate the Amplitude Envelope of each of the new “leftover” traces

Step 3: Stack the Amplitude Envelope traces

You now have the Left Over Seismic Signal (LOSS) stack. This stack can be displayed as the colour background behind the normal stack on most workstations.

Several examples will be shown that illustrate various reasons for having a large amplitude of “non-stacking” data.

## References

Taner, M. T., F. Koehler, and R. E. Sheriff, 1979, Complex seismic trace analysis: Geophysics, v. 44, p. 1041-1063.