

Getting Something for Nothing: Noise Attenuation in an Aliased World

David C. Henley¹

¹*CREWES, Department of Geosciences, University of Calgary, Calgary, Alberta, Canada*

One of the most effective ways to deal with source-generated coherent noise, which often contaminates seismic reflection records, is to record the data in the field using spatial sampling small enough to avoid aliasing the highest frequency components of the lowest-velocity surface wave energy. The offending noise can then be effectively estimated and removed by application of various processing techniques. Even when the noise wavefronts are visibly aliased on the seismic trace gathers, however, there are some simple techniques which can enhance the effectiveness of noise attenuation methods. While none of them are as effective as decreasing the spatial sample interval during data acquisition, the improvements are significant.

Three methods are demonstrated using seismic data created by the CREWES physical modeling system.