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Canada. *Just denoise: seismic wavefield reconstruction via coarse and random spatial sampling.*

Seismic data is a collection of spatio-temporal samplings at the Earth surface of the reflected wavefield for different source positions. Time is typically densely-sampled but the spatial coverage is often random and/or sparse, which is generally considered as a challenge for interpolation to a regular spatial grid and subsequent processing.

In this talk, we turn the seismic interpolation problem of coarsely-sampled data into a denoising problem. To solve it, we use curvelets which explore the very strong geometrical structure of the high-dimensional seismic volume. In this setting, we show that (quasi-)random acquisition geometries are not necessarily a source of adversity but rather a condition to accurately reconstruct densely-sampled seismic data. This is joint work with Felix Herrmann. (Received May 30, 2007)