Chapter 1

Some research examples

SEP students and researchers have extended the work described in this book. A few of their results are summarized here without the details and working codes.

1.1 SOLAR PASSIVE SEISMOLOGY

Solar physicists have learned how to measure the seismic field of the sun surface. Jame Rickett and I applied the helix idea along with the Kolmogoroff method to find the solar impulse response. to some seismic data on the sun. Figure 1.1 shows a raw data cube and the derived impulse response.

1.2 GULF OF MEXICO CUBE

David Lumley from Chevron gave James Rickett some nice 3-D data from the Gulf of Mexico. There movie shows time slices at intervals of about 6ms. These slices are about 18 feet apart. That is about 30,000 years of deposition in the Gulf of Mexico. Altogether it is about a million years (about the age of the human species). Figure 1.2 shows some nice time slices.

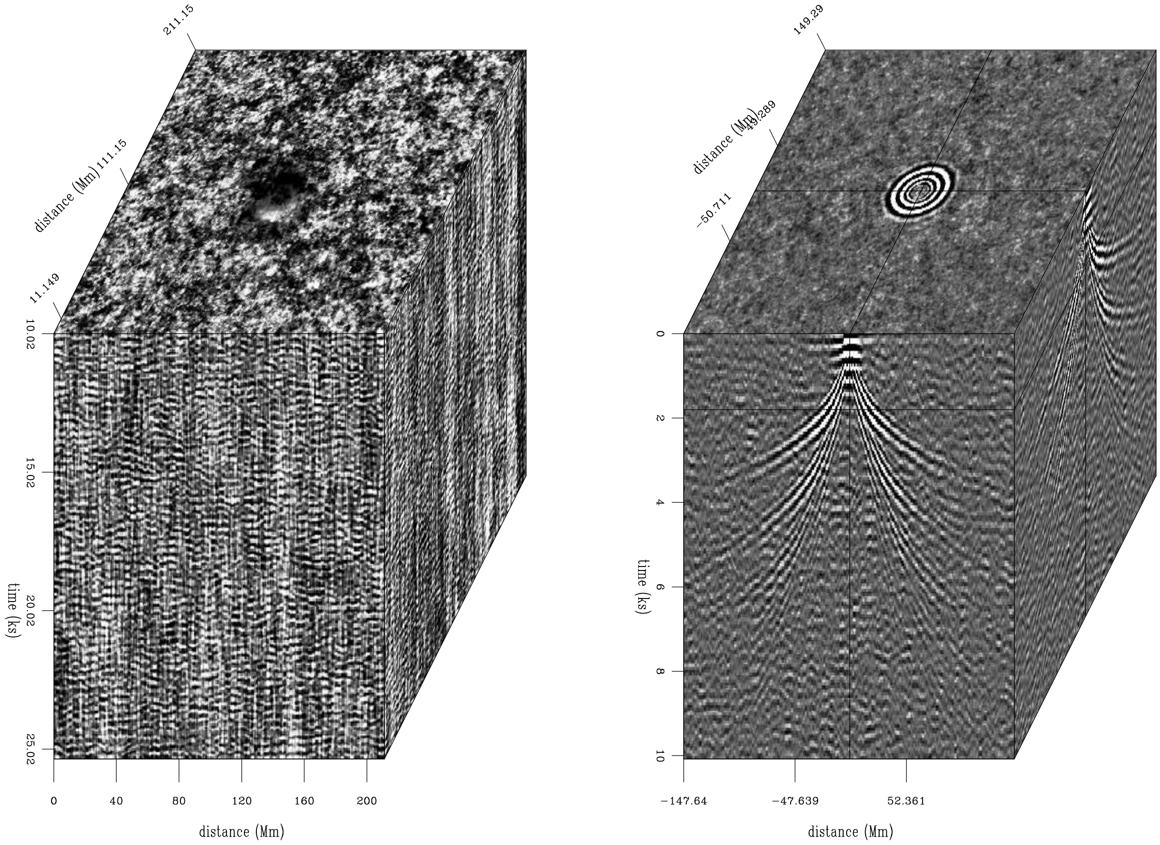

Figure 1.1: Left is raw data, vertical motion $V(t,x,y)$. Right is the derived impulse response. rez-solar [ER,M]

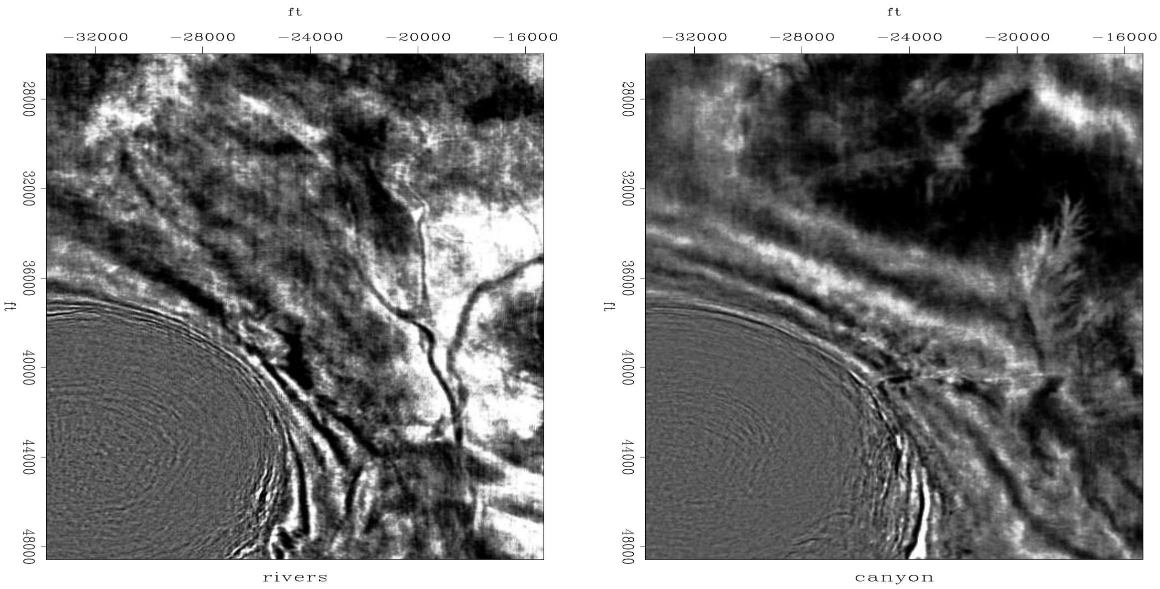

Figure 1.2: Some time slices show a salt dome, some river channels, a dendritic drainage canyon, and a fault. Press button for interactive "Rickmovie". rez-canyon [ER]