

ABSTRACT OF THE DISCLOSURE

Seismic Imaging Using Higher-Order Reflections

Techniques are disclosed relating to geophysical analysis. In one embodiment, a method includes receiving seismic data for a geophysical formation recorded during a seismic survey using one or more seabed sensors and one or more sources. In this embodiment, the method includes determining a seismic gather for a location in the geophysical formation, modifying the seismic gather by interchanging source-receiver definitions for the seismic gather, and imaging the location using the modified gather. In this embodiment, the imaging uses higher-order reflections recorded in the seismic gather. In some embodiments, the method includes separating up-going and down-going wavefields and separately imaging using the up-going wavefield and the down-going wavefield.

Fig. 5