
Simple and effective method for quality control of seismic amplitudes during marine seismic acquisition

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Seismic amplitude preservation is becoming an industry norm and is a prerequisite in amplitude analysis for reservoir characterization and pore fluid prediction studies. Hence, understanding amplitude behaviour and ensuring proper amplitude preservation at the earliest possible stage is of prime importance, that is during the acquisition phase. Conventional quality control measures executed on board seismic vessels, such as the analysis of noise strips and displays on video screens, can no longer meet the needs of present day demand. In addition, quality checks on brute stacks are usually inadequate in identifying anomalies due to amplitude instability as a result of source or receiver technical inferiority.

This paper describes a simple yet effective means of quality control to detect seismic amplitude variations caused by such problems in the field, thus enabling remedial actions to be taken immediately during the progress of the seismic operation. The method involves various amplitude measurements and displays utilizing the on-board seismic processing capabilities in modern seismic vessels. Real data examples will be presented and its effectiveness in detecting source and receiver generated amplitude anomalies will be discussed.
