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**Enhanced Resolution in the Tigentourine 3D Dataset Through Q Compensation**

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Tigentourine Field lies within the central Illizi basin of southeastern Algeria. A recently acquired 3D seismic survey covers the Tigentourine and La Reculee structural culminations and a significant off-structural area to the west. Key objectives of the survey were to define the distribution and internal character of glaciogenic sequences within the upper Ordovician. Seismic modelling suggested that a peak frequency of 25Hz would be sufficient to accomplish these goals. Such frequency content was not achieved in the final contractor processing. Subsequent analysis indicated a dependency of amplitude on surface geology and a Q filter study was undertaken.

The effective Quality Factor (Q) estimated from the Tigentourine 3D dataset was used to define inverse filters to compensate the data for loss of amplitude and for phase distortions. The Q profiles employed were estimated through a method of spectral ratios. The compensation was achieved with a proprietary programme that minimizes the enhancement of noise and preserves the amplitude of the input.

The Q compensated dataset showed a marked improvement in resolution. The increased resolution allowed clear delineation of bounding surfaces of the glaciogenic sequence, as well as internal stratal units.