

Exploration Geophysics Progress Report 2

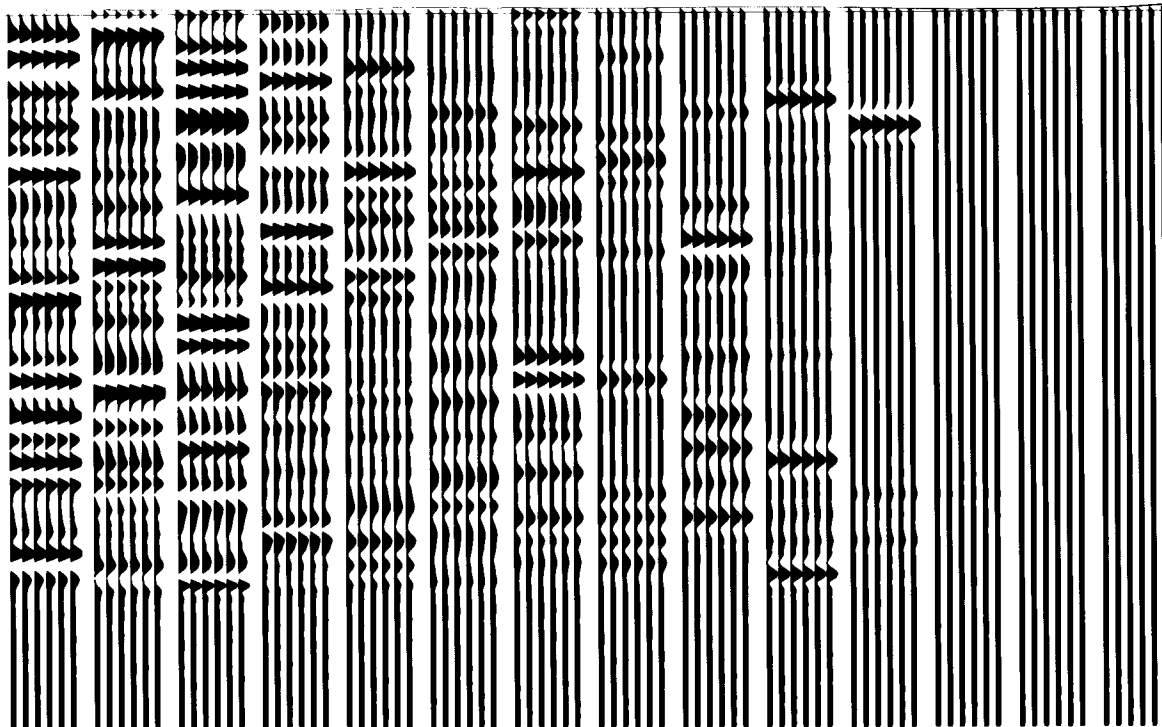
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Introduction

This is the second progress report of the Stanford Exploration Project. While many projects are incomplete, others are beginning to generate some clear conclusions. Many geophysicists regard migration as a final process before display. We are now establishing its value (more precisely, the value of downward continuation) as a preprocessor to velocity analysis, statics analysis and multiple removal. The diffracted multiples project of Don C. Riley is virtually completed and sponsors should receive a copy of his PhD thesis at about the same time as they receive this report.

Another clear conclusion is that much seismic data is now being recorded in such a fashion that it is undersampled in space. In other words we can't recover the continuum very accurately from the field data. This prevents accurate prediction of multiples. Clearly the engineering care which has gone into anti-aliasing in the time domain and accurate true amplitude recovery has not been applied to the space sampling problem. We recommend a group interval of 5 meters for marine data with about 16 times as many recording channels.

For the past seven years I have been writing a book on geophysical data processing. The last two chapters, which are practically completed, have been included in this report, since they provide introductory material which is not otherwise available.

J.F.C. 23 September 1974

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