THREE-DIMENSIONAL MIGRATION. II. RECURSIVE POST-STACK EXTRAPOLATION AND IMAGING (B-11)

G. BLACQUIERE, C. P. A. WAPENAAR AND A. J. BERKHOUT

In part I of this paper we have discussed a 3-D pre-stack method to obtain high-quality multi-fold ZO-data at a reference plane (for instance, the sea bottom). These data can be further processed with 3-D post-stack techniques. In many 3-D post-stack migration schemes the assumption is made that 3-D migration can be carried out as a sequence of 2-D migration steps in orthogonal directions, which is only true for constant velocity media. In other schemes the data are stretched to a constant velocity medium which is actually only allowed for constant dip reflection energy. Both approaches are well suited for low-quality ZO-data, such as CMP-stacked data. When applied to high-quality ZO-data, such as true CDP-stacked data (part I), much relevant information will be lost. Therefore an alternative approach must be followed. In this part of the paper a recursive full 3-D post-stack migration scheme will be discussed. This scheme, which is based on the 3-D version of the phase shift operator, has been implemented on a powerful workstation. It will be shown with the aid of numerical examples that the combination of the procedures discussed in both parts of this paper assures a very good spatial resolution.

Delft University of Technology, Laboratory of Seismics and Acoustics, PO Box 5046, 2600 GA Delft, The Netherlands.