

---

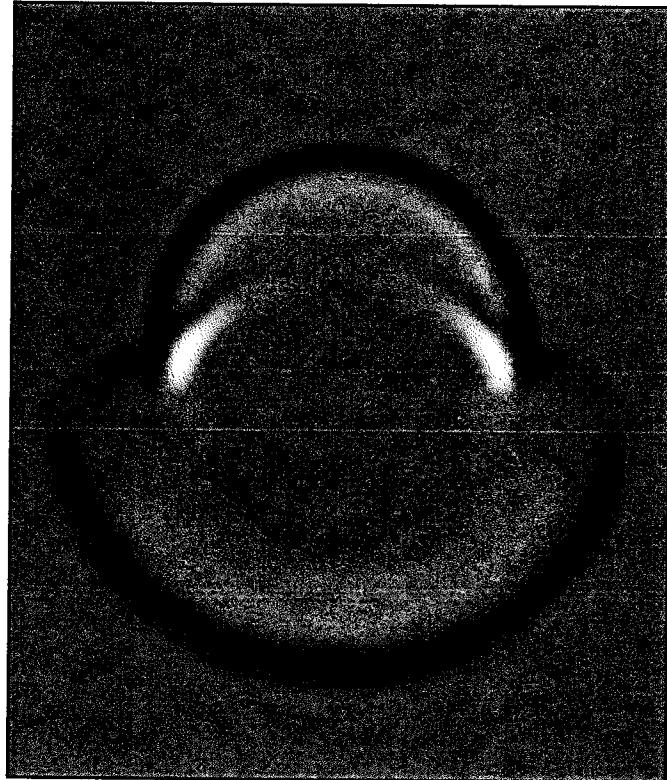
STANFORD  
EXPLORATION  
PROJECT

---

Report Number 51, May 1987

by

*Kamal Al-Yahya,  
Biondo Biondi,  
Jon Claerbout,  
Steve Cole,  
Joe Dellinger,  
John Etgen,  
Paul Fowler,  
Jean Luc Guiziou,  
Clement Kostov,  
Stew Levin,  
Pete Mora,  
Francis Muir,  
Rick Ottolini,  
Niki Serakiotou,  
Chuck Sword,  
Jos van Trier,  
Marta Woodward.*



Copyright © 1987

by the Board of Trustees of the Leland Stanford Junior University

Stanford, California 94305

Copying permitted for all internal purposes of the Sponsors of  
the Stanford Exploration Project

## SEP-51 — TABLE OF CONTENTS

### **Tomography**

<i>Woodward, M.J.</i> , Reflection tomography: vees in midpoint-offset space .....	1
<i>Biondi, B.</i> , Interval velocity estimation from beam-stacked data .....	13
<i>Guiziou, J.L., Dezard, Y., and Martayan, G.</i> , 2D Tomography for VSP .....	29

### **Velocity analysis**

<i>Al-Yahya, K.</i> , Prestack migration velocity analysis: determination of interval velocities ...	49
<i>Fowler, P.</i> , Analysis of a dip-dependent operator relating migration velocities and interval velocities .....	63
<i>Van Trier, J.</i> , Velocity analysis by nonlinear optimization of phase-contoured shot profiles .....	85
<i>Etgen, J.</i> , Velocity analysis by iterative prestack depth migration: a proposal .....	107

### **Migration and modeling**

<i>Muir, F.</i> , Three experimental modeling systems .....	119
<i>Etgen, J.</i> , Fast prestack depth migration using a Kirchhoff integral method .....	129
<i>Al-Yahya, K.</i> , Comparison between two profile migration methods .....	147
<i>Etgen, J.</i> , 3-D prestack migration: two implementations .....	157

### **Inversion - optimization**

<i>Dellinger, J.</i> , Constrained inversion for finite-difference operators .....	175
<i>Van Trier, J.</i> , Some nonlinear optimization methods .....	185
<i>Mora, P.</i> , Inversion = migration + tomography .....	193
<i>Mora, P.</i> , Elastic inversion of field data .....	211

### **Deconvolution**

<i>Levin, S.</i> , Seafloor-consistent multiple suppression .....	219
<i>Kostov, C.</i> , Maximum likelihood estimation of residual wavelets .....	235
<i>Serakiotou, N.</i> , Change detection .....	251

### **Interactive Interpretation**

<i>Claerbout, J.F.</i> , Interpretation with the overlay program .....	269
<i>Kostov, C.</i> , Interactive identification of water-bottom multiples .....	301
<i>Claerbout, J.F.</i> , Datum shift and velocity estimation .....	307
<i>Sword, C.</i> , A Soviet look at datum shift .....	313

### **Slant stacks**

<i>Sword, C.</i> , The CDR method: Chapter 2 of a thesis in progress .....	317
<i>Kostov, C. and Biondi, B.</i> , Improved resolution of slant stacks using beam stacks .....	343
<i>Ottolini, R.</i> , Data driven extraction of Snell traces .....	351
<i>Ottolini, R.</i> , A classification of slant stack imaging methods .....	363
<i>Ottolini, R.</i> , Tau-p bibliography .....	367

### **Computers**

<i>Cole, S., and Dellinger, J.</i> , Display of grey-scale data on a bilevel output device .....	377
<i>Ottolini, R.</i> , Fast cellular automata calculations using graphics processors .....	397
<i>Claerbout, J.F.</i> , The workstation decision at SEP .....	405
<i>Ottolini, R.</i> , Multi-computer seismic programs .....	409
<i>Ottolini, R.</i> , SEP computer update .....	415
<i>Ottolini, R.</i> , Techniques for organizing interactive graphics programs .....	421
 Articles in Press .....	429
Research Personnel .....	431
Sponsors of the Stanford Exploration Project .....	437