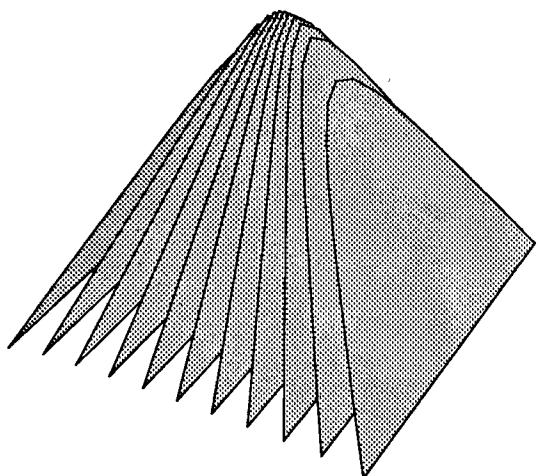
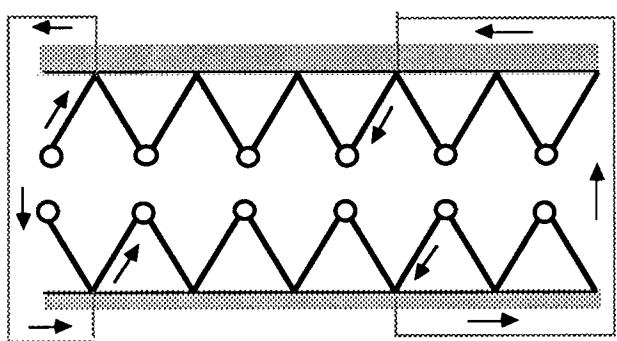


## STANFORD EXPLORATION PROJECT

*Biondo Biondi, Jon Claerbout, Steve Cole, Joe Dellinger, Jean Claude Dulac, John Etgen, Clement Kostov, Francis Muir, Dave Nichols, Rick Ottolini, Niki Serakiotou, Christof Stork, Chuck Sword, Jos van Trier, Marta Woodward and Lin Zhang*

Report Number 59, October 1988



*Copyright ©1988*

*by the Board of Trustees of the Leland Stanford Junior University  
Stanford, California 94305*

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

## SEP-59 — TABLE OF CONTENTS

### Novel Seismic Sources

<i>Claerbout, J.F., Cole, S., Nichols, D., and Zhang, L.</i> , Why a big 2-D array to record microseisms? .....	1
<i>Kostov, C.</i> , Drill-bit signal .....	11
<i>Cole, S.</i> , Phase-shift migration of passive seismic data .....	35

### Anisotropy

<i>Dellinger, J.</i> , Wavefield separation in anisotropic media (and why it's not what you expect) .....	55
<i>Nichols, D., and Ottolini, R.</i> , Symbolic manipulation of layered media .....	73

### Inversion

<i>Zhang, L., Dellinger, J., and Muir, F.</i> , Unique solutions for $l_1$ problems .....	87
<i>Serakiotou, N.</i> , Sensitivity of acoustic data to the geometry of the earth model ..	97

### Velocity Estimation

<i>Biondi, B.</i> , Interval velocity estimation from beam-stacked data — 2-D gradient operator .....	103
<i>Etgen, J.</i> , Prestack depth migration velocity analysis: linear theory revised .....	121
<i>Van Trier, J.</i> , Velocity analysis of migrated seismic data after structural interpretation .....	141
<i>Sword, C.</i> , Interval velocity analysis using $s - g$ downward-continued data .....	151

### Tomography

<i>Woodward, M.J.</i> , Wavepaths in inhomogeneous media .....	163
<i>Stork, C.</i> , A non-linear velocity inversion of a moderately difficult synthetic model in a cross-hole geometry using ray trace tomography .....	169

**Migration and Stacking**

<i>Zhang, L.</i> , A new Jacobian for dip-moveout .....	201
<i>Ottolini, R.</i> , Sign-count stacking velocity analysis, slant stacks, and beam stacks	209

**Computer Graphics**

<i>Dulac, J.C., Nichols, D., Van Trier, J.</i> , An introduction to InterViews .....	217
<i>Dulac, J.C.</i> , A user interface manager: SepView .....	223
<i>Van Trier, J.</i> , An interactive interface for velocity optimization using geological constraints .....	241
<i>Ottolini, R.</i> , Movies on the Macintosh II .....	255
<i>Ottolini, R.</i> , Proposal for an earth science computing project at Stanford .....	269

**Tutorials**

<i>Ottolini, R.</i> , Gallery of the double-square-root equation .....	281
<i>Claerbout, J.F.</i> , A scrutiny of the introduction .....	287

**SEP information**

SEP articles published or in press, 1987-88 .....	291
SEP phone directory .....	293
Research personnel .....	295
Sponsors of the SEP 1987-88 .....	301