

# OIL GEOPHYSICAL PROSPECTING

Vol. 29 No. 1~6 1994

## CONTENTS

### No. 1

Migration algorithm family of equation $P_{rr} = -\frac{v^2}{2} P_{xx}$ .....	Zhao Zhenfei( 1 )
Wave impedance inversion using 1-D wave equation and the effect .....	Li Qinxue et al( 11 )
Elastic wave reverse-time migration using Hartley transform .....	Yao Dezhong et al( 19 )
3-D wave equation forward modeling by inverse migration .....	Chen Biyuan et al( 23 )
An accurate method for finite-element elastic wave field modeling ...	Zhang Jianfeng( 29 )
$k$ - $x$ and $\tau$ - $x$ wave field transforms and their preliminary applications ...	Wang Chengli( 37 )
Principle and method for making seismic structural map by stacked migration section .....	Qin Zheng and Zhu Kean( 48 )
Trace-gathering wave field separation of VSP data collected using different geophone intervals .....	He Xinghua and Deng Jinhua( 59 )
Coefficient recursion relation for dipole fields in multilayer medium .....	Xu Jianhua el al( 69 )
Frequency spectrum determination for near-source seismic waves in steep limestone structure cropping area in east Sichuan, and the effect analysis.....	Xiao Fusen el al( 75 )
Seismic stratigraphic researches on Carboniferous system in the Taliimu basin .....	Wang Kening( 84 )
Correlation sequence method for orderly sample clustering .....	Cheng Qiansheng( 96 )
• EXPERIENCE •	
Application of time-dependent characteristic frequency analysis in stratigraphy research .....	Yao Jiangbo and Xiong Jinliang(101)
TDT transformation .....	Zhu Yanyong(106)
Automatic seismic event pickup using artificial nerve network .....	Yao Yao(111)
Accuracy of CT core analysis .....	Gu Benli(117)
• EDITOR WRITER READER •	
Answer to contributors .....	(122)
• CONTENTS OF OTHER GEOPHYSICAL JOURNALS •	
<i>Geophysics</i> , Vol. 58, No. 6, 7, 8; 1993 .....	(124)
<i>Geophysical Prospecting</i> , Vol. 41, No. 4, 5, 6, 1993 .....	(125)
<i>Geophysical Prospecting for Petroleum</i> , Vol. 32, No. 1, 2, 1993 .....	(125)
• PERSONAGE •	
Geophysicist Liu Wenlin .....	(insert 2)
• NEWS •	
Society of Oil Geophysical Exploration, work conference, Zhuozhou .....	( 68 )
Academic discussion on hydrocarbon-bearing basins in China, Wuxi .....	( 74 )
Academic exchange of research results relating to China's natural gas 85-102 project, Zhanjiang .....	( 83 )
Henan Province, meeting for both the exchange of reservoir description techniques and the transaction of geophysical exploration softwares, Zhengzhou .....	(100)

Contributors .....	(126)
<b>No. 2</b>	
Acoustic logging trace reconstruction using seismic velocity inversion .....	<i>He Guangming et al</i> (127)
Cubical seismic exploration for hydrocarbon field development .....	Б. У. Абулашвили (134)
A pattern recognition method for seismic parameter interpretation .....	<i>Cao Hui</i> (140)
A neural network method for automatic seismic trace editing ...	<i>Zhou Zhusheng et al</i> (147)
Layered elastic medium inversion using genetic algorithm .....	<i>Tao Chunhui et al</i> (156)
Oil recovery ratio modeling by neural network technique .....	<i>Cai Yudong et al</i> (166)
Correlation of hydrocarbon occurrence to structural evolution of central uplift belt in the Dongpu depression .....	<i>Jia Zhibin</i> (170)
Quantitative barrier hydrocarbon sealing evaluation using seismic data .....	<i>Pang Xiongqi et al</i> (179)
Research on phase shift migration of magnetotelluric data .....	<i>Li Jisong et al</i> (189)
Influence of <i>N</i> electrode position upon dual laterolog system performance .....	<i>Hu Binjie and Lin Chunzeng</i> (199)
A new seismic survey instrument:MANPACK DGPS system .....	<i>Zhang Zizhong</i> (203)
<b>• EXPERIENCE •</b>	
Improving the signal/noise ratio of stacked 3-D seismic data by polynomial fitting method, and the trace interpolation .....	<i>Wan Haitao et al</i> (208)
Development of lateral reservoir prediction functions of the LandMark IV workstation .....	<i>Li Ling and Guo Xinfeng</i> (213)
A simple frequency compensation method .....	<i>Zhao Shengliang et al</i> (231)
Phase-shift migration and its effect .....	<i>Yuan Shoutao</i> (236)
Interpretation method for reflection waves from steep interfaces .....	<i>Li Xi'an</i> (244)
<b>• REVIEW •</b>	
Seismic monitor of oil recovery ratio in old oil field .....	<i>Lin Ronghui</i> (252)
<b>• CONTENTS OF OTHER GEOPHYSICAL JOURNALS •</b>	
<i>Geophysics</i> , Vol. 58, No. 9, 10, 11, 1993 .....	(258)
<i>Geophysical Prospecting</i> , Vol. 41, No. 7, 8, 1993 .....	(259)
<i>Geophysical Prospecting for Petroleum</i> , Vol. 32, No. 3, 4, 1993 .....	(259)
<b>• PERSONAGE •</b>	
Geophysicist Fan Zhenxiang .....	(insert 1)
<b>• NEWS •</b>	
China National Petroleum Corporation, a conference on exploration work .....	(133)
New development of oil reservoir research .....	(165)
Contributors .....	(260)
<b>No. 3</b>	
A new method for seismic porosity inversion and its application .....	<i>Zhang Yingbo</i> (261)
Wavelet transform and its application to noise elimination .....	<i>Xia Hongrui et al</i> (274)
A new method for determining fracture density .....	<i>Li Wenlin and Li Chengchu</i> (286)
Seismic tomography for near surface formation .....	<i>Liu Zhenkuan et al</i> (294)
One-pass 3-D migration after stack .....	<i>Wang Youxin et al</i> (302)
Surface-consistent adaptive deconvolution for vibroseis data .....	<i>Ling Yun et al</i> (306)
Analysing gas resources in Wuqing buried hills in terms of geologic structures .....	

in Chinese hydrocarbon bearing basins .....	Yang Kesheng(316)
Palaeovolcanicity interpretation using seismic and geological data .....	Wang Huaiji(325)
Experimental research on sand structural hydrocarbon trap prediction using linear-electrode direct current resistivity method .....	Zhang Tianlun(337)
<b>• EXPERIENCE •</b>	
Separating compressional wave from shear wave in slowness-frequency domain .....	Chen Weiming and Nie Xunbi(348)
Trace gathering of seismic data in complicated area .....	Tian Wenhui(357)
A new synthetic method for VSP three-component data .....	Cui Jitai(368)
1-D wave equation inversion method for non-pulse responses .....	Wu Jiancheng et al(376)
Residual static correction using efficient model annealing method .....	Tang Jianhou et al(382)
Data processing optimization system for hydrocarbon reservoir exploration using radiometric method .....	Wang Xiangyun et al(388)
<b>• CONTENTS OF OTHER GEOPHYSICAL JOURNALS •</b>	
<i>Geophysics</i> , Vol. 58, No. 12, 1993; Vol. 59, No. 1, 1994 .....	(396)
<i>Geophysical Prospecting</i> , Vol. 42, No. 1, 1994 .....	(396)
<b>• PERSONAGE •</b>	
Geophysicist Dong Minyu .....	(insert 2)
<b>• NEWS •</b>	
New development of monographic research on Palaeozoic-group hydrocarbon exploration in North China .....	(285)
An announcement by the Preparatory Group of SEG Liaison Office in Beijing .....	(375)
A new seismograph for shallow exploration comes out in China .....	(395)
Directions of applying for SEG membership .....	(397)
Outline of SEG .....	(397)
Contributors .....	(398)
<b>No. 4</b>	
Series expression and approximation of Zoeppritz's equation .....	Yang Shaoguo et al(399)
AVO analysis in $\tau$ - $p$ domain .....	Li Yundian et al(413)
Tomography of interborehole refraction wave .....	Zhang Ruibin and Wu Lu(423)
Source function and incident field in seismic diffraction tomography .....	Diao Shun et al(434)
Application of wavelet transform to multiresolution analysis of seismic and log signals .....	Yu Houquan et al(441)
Reverse-time and phase-shift migrations of single-way elastic waves .....	Yao Dezhong(449)
Computation of seismic first-arrival times in triangular grid cells .....	Zhang Linbin et al(456)
Fast DMO algorithm .....	Geng Jianhua and Ma Zaitian(462)
FFT & FPT hybrid algorithm for 2-D discrete cosine transform .....	Yu Pinneng(468)
Accurate velocity analysis .....	Li Hongbing(474)
Determination of three-parameter velocity informations and the application .....	Xu Changlian and Zhang Hongying(483)
Geological interpretation of progradational reflections .....	Pu Renhai(490)
<b>• EXPERIENCE •</b>	
High-resolution data processing by resampling method .....	Qian Yongxian et al(498)
Reservoir prediction using multivariate statistics .....	Wang Changgui(504)
Static correction method for shallow reflection waves in Tabei area .....	Li Xirui et al(512)

Eccentric borehole correction of dual laterolog in horizontal well	Xu Jianhua et al	(520)
<b>• REVIEW •</b>		
Development of depth migration and its application	Wang youxin et al	(526)
<b>• CONTENTS OF OTHER GEOPHYSICAL JOURNALS •</b>		
<i>Geophysics</i> , Vol. 59, No. 2, 3, 4, 1994		(532)
<i>Geophysical Prospecting</i> , Vol. 42, No. 2, 3, 1994		(532)
<i>Geophysical Prospecting for Petroleum</i> , Vol. 33, No. 1, 1994		(533)
<b>• PERSONAGE •</b>		
Geophysicist Xu Yun		(insert 1)
<b>• NEWS •</b>		
Preparatory Group of SEG Liaison Office in Beijing, 2nd Meeting, Beijing		(511)
CGE of CPS, 5th Academic Discussion on Oil Geophysical Exploration Techniques for South Area, Hangzhou		(531)
Contributors		(534)
<b>No. 5</b>		
Simulation of elastic waves in fractured medium	Xie Guisheng	(537)
Research on crack scattering in transversally isotropic medium	Diao Shun et al	(545)
An improved algorithm for function-linked neural network and its application	Sun Xiaogong and Wang Shuoru	(552)
Discrete Y transform and its fast algorithm	Yu Pinneng	(558)
Tomography of crossborehole seismic P and S-waves in Liaohe oil fields	Wu Lu et al	(566)
Research on crossborehole seismic observation	Miao Linchang	(574)
Multiparameter constrained inversion of seismic data and the application	Li Zhengwen et al	(581)
Step-optimized inversion of seismic data	Yang Xuming et al	(588)
Poststack processing technique for high-resolution seismic data and its effect	Zhou Zhusheng et al	(601)
Comprehensive research on the techniques for high signal/noise ratio, resolution and fidelity	Liu Qiying	(610)
Application of wavelet transform in improving both signal/noise ratio and resolution of seismic data	Yang Zhongmin and Huang Dayun	(623)
Technique for reservoir pattern recognition	Zhuang Chengsan et al	(630)
Overthrusting in the Erlian basin and its influence on hydrocarbon accumulation	Zhang Delin	(637)
Research on P-wave velocity regularity in heavy oil core	Wang Xinhong et al	(642)
<b>• EXPERIENCE •</b>		
A method for removing high static moveouts of P-SV waves	Tang Jianhou et al	(650)
A new method for improving the regression accuracy of a curve	Mou Zhonghai	(654)
Seismic first arrival pickup using artificial neural network	Zhuang Donghai et al	(659)
<b>• CONTENTS OF OTHER GEOPHYSICAL JOURNALS •</b>		
<i>Geophysics</i> , Vol. 59, No. 5, 6, 1994		(666)
<i>Geophysical Prospecting</i> , Vol. 42, No. 4, 5, 1994		(666)
<i>Geophysical Prospecting for Petroleum</i> , Vol. 33, No. 2, 1994		(667)
<b>• PERSONAGE •</b>		

Geophysicist Gao Ruzeng .....	(insert 2)
<b>• NEWS •</b>	
Oil Geophysical Prospecting is recognized as one of famous Chinese journals .....	(580)
1994 SEG/SPG Joint Academic Conference and 6th Academic Discussion on Oil	
Geophysical Techniques in East China, Daqing City .....	(665)
Contributors .....	(668)
<b>No. 6</b>	
Nonlinear numerical inversion of seismic elastic parameters .....	
..... Hou Anning and He Jiaodeng(669)	
P and S-wave velocity inversions in elastic medium ... Sun Haozhi and Fan Zhenxiang(678)	
Azimuthal interface and the numerical modeling of wave field .....	
..... Niu Binhua and Sun Chunyan(685)	
Multiwave multilayer AVO inversion ..... Yang Shaoguo and Zhou Xixiang(695)	
Elastic wave in EDA medium ..... Wang Hejie and Dong Minyu(706)	
Forward modeling of elastic wave field in fractured medium .....	
..... Li Wenlin and Li Chengchu(713)	
Finite-element viscoelastic VSP modeling ..... Zhu Jianlin and Mou Yongguang(724)	
Deriving microstrata correlative informations from logging curve .....	
..... Hu Kezhen and Liu Ziyun(733)	
Significance of micromagnetic anomaly in petroleum geology ... Wang Yichang et al (740)	
Research on three-dimensional electromagnetic modeling technique in latitudinal	
frequency-domain electromagnetic sounding ..... Yin Changchun (746)	
<b>• EXPERIENCE •</b>	
Application of transient sounding in hydrocarbon exploration .....	
..... Lu Yousheng and He Zhanxiang(754)	
Influence of lateral velocity variation upon interpretation of low-amplitude structure .....	
..... Yan Yousheng (758)	
Polarity problem of seismic section ..... Han Wengong (769)	
Design of mid-curved radial horizontal well ..... Liu Chuanhu and Liu Fugui(773)	
Improvement of singular-value decomposition filtering and the application .....	
..... Chen Zunde et al (783)	
A method for interactive mis-tie correction ..... Su Yongchang (793)	
<b>• PERSONAGE •</b>	
Geophysicist Wang Weihua .....	(insert 1)
<b>• NEWS •</b>	
4th academic conference on oil geophysical exploration techniques in West China,	
Shanshan in Xinjiang .....	(677)
10th SCG annual meeting and international academic conference on deep-regional	
geophysics and geology, Changchun .....	(684)
Geophysical Exploration Committee of Guangdong Petroleum Society, 5th annual	
meeting and academic conference, Zhanjiang .....	(723)
Accademic conference on new oil geophysical exploration techniques, Yichang .....	(739)
CGE of CPS, and announcement of 1995 academic conferences .....	(799)
Contributors .....	(800)