

# **13th International Conference on Geoinformatics – Theoretical and Applied Aspects 2014**

**Kiev, Ukraine  
12 – 15 May 2014**

**ISBN: 978-1-63266-540-9**

**Printed from e-media with permission by:**

Curran Associates, Inc.  
57 Morehouse Lane  
Red Hook, NY 12571



**Some format issues inherent in the e-media version may also appear in this print version.**

Copyright© (2014) by the European Association of Geoscientists & Engineers  
All rights reserved.

Printed by Curran Associates, Inc. (2014)

For permission requests, please contact by the European Association of Geoscientists & Engineers  
at the address below.

EAGE  
PO Box 59  
3990 DB Houten  
The Netherlands

Phone: +31 88 995 5055  
Fax: +31 30 634 3524

[eage@eage.org](mailto:eage@eage.org)

**Additional copies of this publication are available from:**

Curran Associates, Inc.  
57 Morehouse Lane  
Red Hook, NY 12571 USA  
Phone: 845-758-0400  
Fax: 845-758-2634  
Email: [curran@proceedings.com](mailto:curran@proceedings.com)  
Web: [www.proceedings.com](http://www.proceedings.com)

## TABLE OF CONTENTS

<b>6100 Approbation of Frequency-Resonance Method of Remote Sensing Data Processing on Hydrocarbon Field of Barents Sea Offshore .....</b>	1
<i>S. Levashov, N. Yakymchuk, I. Korchagin, D. Bozhezha, V. Prylukov, M. Petranovskaya</i>	
<b>6101 Assessment of the Prospects of Tight Sandstone Gas-Bearing Within Areas of Deep Wells Drilling in Dnieper-Donetsk Basin .....</b>	7
<i>S. Levashov, N. Yakymchuk, I. Korchagin, D. Bozhezha, V. Prylukov, I. Pydlynska</i>	
<b>6102 About Possibility of Detection of Gas Commercial Accumulations within Ukrainian Crystalline Shield .....</b>	13
<i>S. Levashov, N. Yakymchuk, I. Korchagin, D. Bozhezha, V. Prylukov, D. Shust</i>	
<b>6134 Process of Large Scale Fold Forming in the Crust Sedimentary Layer .....</b>	19
<i>M. Lubkov</i>	
<b>6168 Creation of Databases with Optimum Structure of POI Objects for Auto Navigation Maps .....</b>	25
<i>S. Dubrovina</i>	
<b>6184 Cooling Process of the Oceanic Lithosphere.....</b>	30
<i>M. Lubkov</i>	
<b>6357 Elastic Constants Determination of Sedimentary Deposits in Triclinic Approximation Based on VSP Data .....</b>	36
<i>G. Prodayvoda, P. Kuzmenko, A. Vyzhva</i>	
<b>6381 Upper Mantle Seismic Boundaries Vrancea Zone and its Surroundings and the Earthquake Foci.....</b>	41
<i>O. Ostrivniy, O. Kendzera, T. Tsvetkova</i>	
<b>6382 The Modification of Forrester-Graham Urban Dynamics Model through Assimilation of the Statistical Data of Space Heomonitoring and Ground-based Observations for the Analysis and Prediction of Environmental Conditions in Kyiv .....</b>	45
<i>A. Sokolovska</i>	
<b>6429 The Newest Geodynamics of the Latorytsia River Basin Territory, the Ukrainian Carpathians (Basedon Structural Morphometry).....</b>	51
<i>T. Andriiets, O. Ivanik, S. Muravko</i>	
<b>6436 Thermobaric Elastic-Density Anomalies in the Earth's Crust and Their Origin and the Dynamic of Change.....</b>	56
<i>V. Korchin</i>	
<b>6439 Magnetic Field and Magnetic Susceptibility Investigation at the Hydrocarbon Extraction Areas in Carpathian Foredeep .....</b>	61
<i>O. Menshov, R. Kudaravets, I. Chobotok</i>	
<b>6457 Extraction of Shale Gas in the Seismically Active Areas (On Example of Olesk Area) .....</b>	66
<i>L. Nazarevych</i>	
<b>6466 Hydrochemical Data Restoring Method Based on a Logarithmic Model Correlation.....</b>	71
<i>M. Zhukov, A. Klypa</i>	
<b>6480 Adaptive Opto-Cryogenic Gravimeter for Mineral Exploration .....</b>	76
<i>V. Yatsenko, O. Sholokhov, N. Nalivaichuk</i>	
<b>6482 Hyperspectral Methods in Geology: Current State and Prospects .....</b>	82
<i>N. Voronov, V. Gnidenko, V. Yatsenko</i>	
<b>6486 Theoretical Magnetic Models of Dyke Initiation .....</b>	86
<i>K. Gadiatska, M. Orlyuk</i>	
<b>6499 Statistical Analysis of the Factors of Natural and Technogenic Component of Mudflow .....</b>	91
<i>D. Kasiyanchuk</i>	
<b>6500 Thermobaric Seismic Gravity Petrophysical Models of the Earth's Crust Deep Horizons of the Ukrainian Shield .....</b>	96
<i>V. Korchin, P. Burtyni, E. Karnaukhova</i>	
<b>6501 Overview of Methods for Hydrogeological Monitoring Groundwater Ukraine as an Example of Zhytomyr Region .....</b>	102
<i>M. Tymkiv, L. Davydova</i>	
<b>6502 Magnetomineralogical Study of Old Metallurgical Slags Form the River Trostyanetsya Deposits (Zhytomyr Region) .....</b>	107
<i>K. Bondar, B. Gorka-Kostrubiec, O. Mitrokhin</i>	
<b>6511 Deep Features of Seismotectonic Process in Ukrainian Carpathians .....</b>	112
<i>A. Nazarevych, L. Nazarevych</i>	

<b>6513 Natural and Technogenic Components of the Magnetic Field for Kyiv Territory</b> .....	117
<i>M. Orlyuk, A. Romenets, I. Orliuk</i>	
<b>6551 Data Processing of MT and MV Researches on "Pervomayskiy" Profile</b> .....	122
<i>B. Shyrkov, A. Kushnir</i>	
<b>6552 The Distribution of the Estimation Paired Coefficient Correlation Between Density and Magnetic Susceptibility of the Rocks on the Surfaces of Crystalline Foundation in the Novokonstantinovka Ore Field, the Ukrainian Shield</b> .....	128
<i>I. Mihalchenko</i>	
<b>6560 Filtration-capacitive Properties of Carbonate Rocks Carboniferous Novomykolayivka Areas of Research Results Petrophysical</b> .....	134
<i>A. Kostrets</i>	
<b>6587 Development of a Seismic Processing Sequence 2D Seismic Procedure Observations (On an Example of Olhivska Area)</b> .....	139
<i>A. Lomonos</i>	
<b>6615 Production Prospects Coal Bed Methane and Coal Mine Methane in Donbas</b> .....	142
<i>Y. Kurya</i>	
<b>6616 On Positioning of Underground Targets. Case Study from Podillya Caves</b> .....	146
<i>V. Halimendik, V. Nasedkin, O. Shkoda</i>	
<b>6617 Modeling of the Structural Plan Rizan Formation Based on Geological Practice in v. Trudolyubovka</b> .....	150
<i>E. Uglitskii</i>	
<b>6624 Lineaments of North-West and Central Part of the Dnieper-Donets Aulacogene by Geomagnetic Data</b> .....	155
<i>T. Rozyan</i>	
<b>6630 Strong 2010 Northern Hemisphere Heat Wave: Causes and Perspectives in Prediction Such Events</b> .....	159
<i>K. Slyzka</i>	
<b>6641 Application TTG for the Investigation of Inner Structure of the Geologic Environment and Hydrocarbon Traps Searching</b> .....	165
<i>O. Vinnichenko, N. Vinnichenko, I. Glushchenko, V. Stepchenko</i>	
<b>6643 On Magnetic Susceptibility of Soils and Pottery from Archaeological Complex Vijtenky</b> .....	169
<i>I. Pap, K. Bondar</i>	
<b>6648 Acoustic Anisotropy Investigation of Volyno-Podillya Area Reservoir Rocks</b> .....	174
<i>L. Tkachov, D. Bezrodnyi, G. Prodavoda</i>	
<b>6657 Optimization and Parallelization of Newton Type Methods for Solving Structural Gravimetry and Magnetometry Inverse Problems</b> .....	178
<i>E. Akimova, A. Miniakhmetova, M. Martyshko</i>	
<b>6669 Ecomagnetic Characteristics and Acidity of Soils from Pushcha Vodytsya Compared with Background Soils</b> .....	183
<i>K. Bondar, O. Makienko, Y. Kuz</i>	
<b>6712 Using Three-Dimensional Models and GIS to Assess the Stability of Slopes (for Kyiv City)</b> .....	188
<i>N. Aksyom, A. Aksyom</i>	
<b>21855 A Review of Different Methods of Selection of Most Informative Spectral Bands</b> .....	193
<i>S. Alpert</i>	
<b>22039 Exogeneous Mechanism of Global Tectonics</b> .....	198
<i>P. Kalenda, I. Wandrol, V. Prochazka, L. Neumann</i>	
<b>22078 Zero-frequency Upscaling in TTI Media</b> .....	206
<i>A. Stovas, Y. Roganov</i>	
<b>22095 Bayesian Inversion with Spatial Priors: An Exact Sampling Alternative to McMC</b> .....	211
<i>M. Walker, A. Curtis</i>	
<b>Author Index</b>	