

3rd International Conference on Engineering Geophysics 2014

Gelendzhik, Russia
21 - 25 April 2014

ISBN: 978-1-5108-2825-4

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 (EAGE)
All rights reserved.

Printed by Curran Associates, Inc. (2016)

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

European Association of Geoscientists & Engineers (EAGE)
PO Box 59
3990 DB Houten
The Netherlands

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

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: 845-758-2633
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

RESISTIVITY AND MAGNETOMETRY SURVEYS IN THE CHORA OF CHERSONESOS	1
<i>S. V. Shakuro, V. V. Panchenko</i>	
JOINT ANALYSIS OF SELF POTENTIAL AND ELECTRICAL RESISTIVITY TOMOGRAPHY DATA FOR STUDY ALEXANDROVSKY SETTLEMENT (KALUGA REGION)	7
<i>V. A. Shevnin, A. A. Bobachev, S. V. Ivanova, K. I. Baranchuk</i>	
INTEGRATED GEOPHYSICAL SURVEYS ON THE KULIKOVO FIELD BATTLE	13
<i>I. N. Modin, A. Pelevin</i>	
ELECTROMAGNETIC PROFILING AND ELECTRICAL RESISTIVITY TOMOGRAPHY IN THE STUDY OF ARCHAEOLOGICAL MONUMENTS	18
<i>Y. G. Karin, E. V. Balkov, O. A. Pozdnyakova</i>	
STUDYING OF ENGINEERING-GEOLOGICAL CONDITIONS OF A DETINETS OF THE HOTMYZHISKY ANCIENT SETTLEMENT OF THE 9-13 CENTURIES WITH USE OF THE GEOSCANNER NEMFIS	24
<i>Y. S. Pogorelov, S. V. Sergeev, A. G. Dyachenko, B. Y. Adigamov, Y. V. Taletsky</i>	
3D- ELECTRICAL TOMOGRAPHY AND GPR TO STUDY ANCIENT BURIAL MOUNDS	32
<i>I. Modin, S. A. Erokhin, A. Pavlova, A. Pelevin, T. Shishkina</i>	
POSSIBILITY AND RESULTS OF APPLYING THE RESONANCE-ACOUSTIC PROFILING METHOD FOR ARCHAEOLOGICAL RESEARCH ASSISTANCE. EXAMINATION OF THE MOUND	36
<i>I. V. Zuykov, G. Szabo</i>	
TESTING OF MOTION CONTROL SYSTEM OF A ROLLING STOCK ALONG THE LANDSLIDE-PRONE AREAS IN THE NORTH-CAUCASIAN RAILWAY	43
<i>A. Kruglikov, Z. Khakiev, M. Okost, A. Morozov, V. Yavna</i>	
THE APPLICATION OF CABLELESS DATA ACQUISITION SYSTEM «SCOUT» IN ENGINEERING GEOPHYSICS	49
<i>D. N. Bondarenko, B. Bucharsky, V. Goryachev</i>	
INTEGRATED INTERPRETATION OF ELECTRICAL AND SEISMIC TOMOGRAPHY DATA TO FORECAST THE STABILITY OF LANDSLIDE SLOPES	54
<i>S. Burlutskiy, V. Glazoumov</i>	
ELECTRIC RESISTIVITY TOMOGRAPHY AND EM-I MAPPING FOR ENVIRONMENT DAMAGE ASSESSMENT	63
<i>Y. Manshteyn, E. V. Balkov</i>	
THE INFLUENCE OF THE METEOROLOGICAL FACTORS ON GEOELECTRICAL MONITORING DATA	69
<i>M. I. Bogdanov, D. V. Makarov, I. N. Modin</i>	
GEOPHYSICAL SURVEYS OF ASH DISPOSAL USING ELECTRICAL RESISTIVITY TOMOGRAPHY AND ELECTROMAGNETIC PROFILING	79
<i>I. O. Shaparenko, Y. A. Manstein, E. V. Balkov</i>	
3D ELECTROTOMOGRAPHY ON THE TAILING DUMPS OF KARABASH TOWN (CHELYABINSK REGION)	84
<i>S. Y. Khalatov, E. V. Balkov, T. V. Korneeva</i>	
SHALLOW DEPTH ELECTROMAGNETIC PROFILING BY THE COMPACT DEVICE: THEORETICAL ASPECTS AND FIELD TESTS	88
<i>E. V. Balkov, S. Y. Khalatov, A. K. Manstein, G. L. Panin</i>	
DAM TRANSVERSAL TOPOGRAPHY CORRECTION OF GEOELECTRICAL PROFILE DATA	95
<i>O. V. Kozlov, A. M. Pavlova</i>	
AZIMUTHAL ELECTRICAL PROFILING OVER THE MEDIA WITH TWO DIRECTIONS OF ANISOTROPY	101
<i>T. V. Yalov</i>	
GEOHERMAL FIELDS STRUCTURE OF EBECO VOLCANO BY GEOCHEMICAL AND ERT TOMOGRAPHY INVESTIGATIONS	105
<i>G. Panin, T. A. Kotenko, Y. G. Karin, E. V. Balkov</i>	
SOIL SAMPLES ELECTRICAL PROPERTIES MEASUREMENTS AT STUDY AREA NEAR ALEXANDROVKA VILLAGE	111
<i>V. A. Shevnin, A. A. Bobachev, K. I. Baranchuk</i>	

THE COMPARATIVE ANALYSIS OF THE APPLYING THE QUASI 3D- AND 3D- ELECTRICAL RESISTIVITY TOMOGRAPHY FOR THE CASE STUDY IN THE UNGURSKIY STRIP MINE PLOT IN THE NOVOSIBIRSK REGION.....	118
<i>K. Tsukanov , Y. Manstein, E. Balkov</i>	
GPR AND ERT APPLICATION FOR SUBSURFACE FACILITIES GROUND ASSESSMENT	123
<i>M. V. Mazurenko</i>	
COMPARISON OF DIFFERENT METHODS OF CONTACT AND NON-CONTACT MEASUREMENT IN THE MIDDLE OF RUSSIA	127
<i>A. I. Gruzdev</i>	
SOFTWARE FOR RADIAL-FREQUENCY SENSING EQUIPMENT	132
<i>D. Fadeev, E. Balkov</i>	
GEOPHYSICAL INVESTIGATIONS GOLD ORE DEPOSIT IN THE KUZNETSK ALATAU	138
<i>A. S. Vishnivetsky , D. A. Borisenko , V. V. Olenchenko , P. G. Dyadkov , D. A. Kuleshov, A. A. Bobachev</i>	
STRUCTURING OF GEOPHYSICAL FIELDS IN THE PROBLEM OF SPATIAL INTERPOLATION	144
<i>S. G. Kataev</i>	
DEBYE RELAXATION AND ANOMALOUS CONDUCTIVITY OF WATER IN THE HIGH FREQUENCIES RANGE	151
<i>M. Vladov , A. Metalnikov , I. N. Modin, V. V. Nemcov</i>	
ENGINEERING-GEOLOGICAL FEATURES OF THE MSU MAIN BUILDING BASEMENT BY HIGH-ACCURACY GRAVITY	154
<i>A. A. Fadeev , I. V. Lugin , T. B. Sokolova, V. R. Melihov</i>	
IMPROVING THE EFFECTIVENESS OF DETECTION OF KARST BY COMPLEX OF ELECTRICAL RESISTIVITY TOMOGRAPHY AND GRAVITY.....	158
<i>A. A. Fadeev , I. N. Modin , T. B. Sokolova, I. V. Lugin</i>	
GEOPHYSICAL INVESTIGATIONS OF GROUND SUBSIDENCE IN THE VICINITY OF MAIN SEWER NEW MINES IN ST. PETERSBURG MINES IN ST. PETERSBURG	162
<i>A. F. Volynin</i>	
STUDY OF THE EFFECT OF THE PROPERTIES OF A SUBSURFACE GROUND LAYER ON THE POSSIBILITY OF ITS DETECTION BY MEANS OF VERTICAL ELECTRIC SOUNDING	170
<i>A. G. Kochur , Z. S. Lapchenkova, V. A. Yavna</i>	
TSIKL-8-S EQUIPMENT FOR SHALLOW TEM.....	178
<i>M. U. Sekachev , A. K. Zakharkin , V. V. Gorjachev, P. M. Sekachev</i>	
INVESTIGATION OF A NEW ELECTRICAL ARRAY FOR VERTICAL ELECTRICAL SOUNDING WITH UNGROUNDED MEASURING LINE	181
<i>A. Tatarskiy, K. Titov</i>	
THE PRACTICE OF APPLICATION OF THE METHOD OF MULTICHANNEL ANALYSIS OF SURFACE WAVES (MASW)	188
<i>V. V. Moldakov, V. V. Romanov</i>	
APPLIED EXPERIENCE IN THE CALCULATION OF SOME INDICATORS OF PHYSICAL AND MECHANICAL PROPERTIES OF SOILS BY THE EXAMPLE OF THE PRODUCTION OF WORKS.....	198
<i>M. V. Prokhachev, O. Burdina</i>	
EXOGEN-CRYOGENIC PROCESSES ON DATA OF GROUND PENETRATING RADAR.....	207
<i>O. D. Tregubov</i>	
APPLICATION OF RESONANCE-ACOUSTIC PROFILING TO DETERMINE THE REQUIRED DEPTH OF PILE FIELD PENETRATION.....	214
<i>I. V. Zuykov, V. V. Bedinov</i>	
SPECTRAL INDUCED POLARIZATION IN MINERAL EXPLORATION.....	219
<i>V. A. Kulikov, I. D. Gruzdeva</i>	
SEISMIC MICROZONING WITH EXCHANGE REFRACTED WAVES	222
<i>V. V. Romanov, I. I. Rahmatullin</i>	
PROBLEMS OF AN ESTIMATION OF QUANTITATIVE PARAMETERS OF SEISMIC ACTION ON WEAK WATER SATURATED SOILS.....	228
<i>I. G. Mindel</i>	
RESULTS OF RESEARCHES OF LAST YEARS BY DETERMINATION OF THE MODULE OF DEFORMATIONS OF SANDS ACCORDING TO SEISMOACOUSTICS.....	236
<i>B. A. Trifonov , I. G. Mindel , B. B. Sevostyanov, N. A. Ragozin</i>	
ABOUT DIELECTRIC VALUES IN PERFORMING GPR INVESTIGATIONS	242
<i>A. M. Kulizhnikov, R. A. Eremin</i>	

DETERMINATION OF THE NUMBER AND BOUNDARIES OF THE PLASTICITY OF CLAY SOILS BY INFRARED SPECTROSCOPY	253
<i>A. Yavna , A. Kasprzhitskiy , G. Lazorenko, S. Sulavko</i>	
THE COMBINED APPLICATION OF GROUND PENETRATING RADAR AND ELECTRICAL RESISTIVITY IMAGING FOR THE INVESTIGATION OF SAND-CLAY GEOLOGICAL CROSS-SECTION	258
<i>V. Glazounov, D. Lalomov</i>	
2D-ERT FOR STUDYING OF A CARBONATE AND SULPHATIC KARST	267
<i>I. N. Modin , S. Akulenko , A. Pelevin , S. Erokhin , D. Makarov , D. Bolshakov, D. Kvon</i>	
CONCREAT-ASPHALT PROPERTIES BY ULTRASONIC AND GPR TESTING	276
<i>D. K. Bolshakov, O. V. Kozlov</i>	
PHYSICAL AND MATHEMATICAL MODELING OF GPR SIGNAL AT PRESENCE IN A SECTION THIN GROUND ICE LAYERS AND ICE WEDGES.....	284
<i>A. V. Titov</i>	
INTEGRATION OF CONTACT AND AERIAL ANTENNA UNITS IN GPR SURVEYING OF ROAD STRUCTURES.....	288
<i>A. M. Kulizhnikov, R. A. Eremin</i>	
APPLYING OF GPR METHOD FOR SHALLOW SUBSURFACE STUDIES IN PERMAFROST.....	298
<i>S. S. Bricheva</i>	
GPR TOMOGRAPHY USING AT INSPECTION OF ENGINEERING STRUCTURES	302
<i>A. Kalashnikov , M. Vladov, M. Sudakova</i>	
SPECIFICITY OF MULTIWAVE ENGINEERING VSP	308
<i>N. A. Ragozin , I. G. Mindel, B. A. Trifonov</i>	
TECHNOLOGICAL SUPPORT OF THE QUALITY OF THE RESULTS OF SHALLOW SEISMIC RESEARCHES	316
<i>S. A. Fedotov</i>	
APPLICATION OF 3D HIGH-RESOLUTION MARINE SEISMIC DATA FOR GEOHAZARD MAPPING	323
<i>A. A. Shmatkov , A. A. Shmatkova , V. G. Gaynanov, M. J. Tokarev</i>	
SOME MODERN ALGORYTHMS OF INCOHERENT NOISE SUPPRESSION USED IN ENGINEERING SEISMICS	330
<i>S. V. Buryak, S. A. Vakulenko</i>	
PREDICTION OF STABILITY OF ROCK MASSIF ON THE BASIS OF THE METHOD OF SEISMIC LOCATION IN THE PROCESSES OF CONSTRUCTION OF UNDERGROUND STRUCTURES	336
<i>V. B. Pisetskiy , V. V. Vlasov , V. P. Cherepanov , I. V. Abaturova , A. E. Sudilin , Y. V. Patrushev, A. V. Aleksandrova</i>	
CRITERIA OF PERMAFROST TRACING ON SHALLOW SEISMIC RECORDS IN BOTH THE PECHORA AND THE SOUTH-WESTERN KARA SEAS.....	341
<i>S. I. Rokos , S. N. Kulikov, A. Tulapin</i>	
SEISMOACOUSTIC RAYING FOR THE SURVEY OF CONCRETE AND MASONRY STRUCTURES	349
<i>A. N. Oshkin , I. V. Fokin , S. A. Tikhotsky, M. L. Vladov</i>	
COLLAPSE ZONE OF THE FLOODED MINE SEISMIC TIME-LAPSE RESEARCHES	358
<i>I. A. Sanfirov , A. I. Babkin , A. G. Yaroslavtsev , A. A. Zhikin, K. B. Fatkin</i>	
THE EXPERIENCE OF IMPACT METHOD APPLICATION FOR FOUNDATION STRUCTURES CONSTRUCTION.....	363
<i>A. Kuvaldin , A. Khmelnitsky, V. V. Kapustin</i>	
COLLAPSE ZONE OF THE FLOODED MINE SEISMIC TIME-LAPSE RESEARCHES	367
<i>S. M. Krylatkov , N. A. Krylatkova, A. N. Krylevskaya</i>	
COMPLEX EVALUATION OF THE HOST SOIL AND REINFORCED CONCRETE CONDITION IN HYDRAULIC STRUCTURES.....	372
<i>A. Khmelnitsky , A. Kuvaldin, V. V. Kapustin</i>	
Author Index	