

# **XXVII R-S-P Seminar on Theoretical Foundation of Civil Engineering (TFoCE 2018)**

MATEC Web of Conferences Volume 196 (2018)

Rostov-on-Don, Russia  
17 - 21 September 2018

Part 1 of 2

## **Editors:**

**V. Andreev  
T. Matsevich**

**A. Ter-Martirosyan  
A. Adamtsevich**

ISBN: 978-1-5108-7063-5

**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.**

This work is licensed under a Creative Commons Attribution license:  
<http://creativecommons.org/licenses/by/2.0/>

**You are free to:**

**Share** – copy and redistribute the material in any medium or format.

**Adapt** – remix, transform, and build upon the material for any purpose, even commercial.

The licensor cannot revoke these freedoms as long as you follow the license terms.

**Under the following terms:**

You must give appropriate credit, provide a link to the license, and indicate if changes were made.

You may do so in any reasonable manner, but not in any way that suggests the licensor endorses you or your use. The copyright is retained by the corresponding authors.

Printed by Curran Associates, Inc. (2018)

For additional information, please contact EDP Sciences – Web of Conferences  
at the address below.

EDP Sciences – Web of Conferences  
17, Avenue du Hoggar  
Parc d'Activité de Courtabœuf  
BP 112  
F-91944 Les Ulis Cedex A  
France

Phone: +33 (0) 1 69 18 75 75

Fax: +33 (0) 1 69 28 84 91

[contact-edps@webofconferences.org](mailto:contact-edps@webofconferences.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](mailto:curran@proceedings.com)  
Web: [www.proceedings.com](http://www.proceedings.com)

# TABLE OF CONTENTS

## PART 1

<b>DYNAMIC RESPONSE OF A PLATE LAYING ON ELASTIC BASE DURING THE IMPACT OF A CONICAL INDENTER</b> .....	1
<i>Beskopylny Alexey, Veremeenko Andrey, Kadomtseva Elena, Shilov Alexander</i>	
<b>CALCULATION OF ORTHOTROPIC PLATES FOR CREEP TAKING INTO ACCOUNT SHEAR DEFORMATIONS</b> .....	8
<i>Chepurenko Anton, Yazyev Batyr, Saibel Angelica</i>	
<b>CALCULATION OF WOODEN BEAMS ON THE STABILITY OF A FLAT BENDING SHAPE ENHANCEMENT</b> .....	15
<i>Chepurenko Anton, Ulianskaya Vera, Yazyev Serdar, Zotov Ivan</i>	
<b>ANALYZING THE INFLUENCE OF THE DISK MOTION ON LONGITUDINAL OSCILLATIONS OF A BEAM WITH RHEOLOGICAL PROPERTIES</b> .....	20
<i>Kalmova Maria, Pavlov Georgy</i>	
<b>EXPERIMENTAL RESEARCH OF BEAMS WITH CORRUGATED WEB</b> .....	26
<i>Zubkov Vladimir, Lukin Alexey, Alpatov Vadim</i>	
<b>THE TASK OF DIRECT PIEZOEFFECT FOR A BI-MORTH PLATE</b> .....	32
<i>Shlyahin Dmitriy, Ratmanova Olesya</i>	
<b>ANALYZING CALCULATION RESULTS OF NON-STATIONARY AXISYMMETRIC THERMOELASTICITY TASK FOR A CIRCULAR ISOTROPIC PLATE</b> .....	37
<i>Shlyahin Dmitriy</i>	
<b>THIN-WALLED PROFILES AND THEIR JOINT ASSEMBLY UNITS BUILT WITH SCREWS: NUMERICAL STUDIES OF LOAD BEARING CAPACITY</b> .....	42
<i>Alpatov Vadim, Soloviev Alexey</i>	
<b>INFLUENCE OF INHOMOGENEITY OF THE FOUNDATION ON THE STRESS-STRAIN STATE OF THE DESIGN LOCATED ON IT</b> .....	49
<i>Leontyev Andrey, Balandina Ksenia</i>	
<b>COMBINED SEMIANALYTICAL AND NUMERICAL STATIC PLATE ANALYSIS. PART 1: FORMULATION OF THE PROBLEM AND APPROXIMATION MODELS</b> .....	55
<i>Negrozov Oleg, Akimov Pavel, Mozgaleva Marina</i>	
<b>COMBINED SEMIANALYTICAL AND NUMERICAL STATIC PLATE ANALYSIS. PART 2: RESULTANT MULTIPOINT BOUNDARY PROBLEM</b> .....	63
<i>Negrozov Oleg, Akimov Pavel, Mozgaleva Marina</i>	
<b>DEVELOPMENT OF THE FEM WHEEL-SOIL MODEL FOR THE DESIGN OF FLEXIBLE PAVEMENTS</b> .....	69
<i>Daniel Luboš, Kortiš Ján, Decký Martin, Pisca Peter, Fabo Peter</i>	
<b>DETERMINATION OF PHYSIC AND MECHANICAL PARAMETERS OF HIGH-DENSITY POLYETHYLENE BASED ON RELAXATION CURVES DUE TO THE PRESENCE OF HYDROXYAPATITE AND IONIZING RADIATION</b> .....	75
<i>Litvinov Stepan, Yazyev Serdar, Vysokovsky Dmitriy</i>	
<b>CALCULATION OF THIN ISOTROPIC SHELLS BEYOND THE ELASTIC LIMIT BY THE METHOD OF ELASTIC SOLUTIONS</b> .....	81
<i>Astakhova Avgustina</i>	
<b>COMPUTER MODELING OF GLUED LAMINATED TIMBER BEAM REINFORCED WITH STEEL BARS FIXED WITH EPOXY RESIN</b> .....	89
<i>Blokhina Nina, Nazarenko Sergei</i>	
<b>METHOD FOR FINDING MAJORANT FUNCTION ESTIMATES REQUIRED TO DETERMINE PICARD'S SUCCESSIVE APPROXIMATIONS CONVERGENCE DOMAIN</b> .....	94
<i>Petelina Vera</i>	
<b>PERFORMANCE OF A SUSPENSION BRIDGE WITH ACTIVE VIBRATION DAMPERS</b> .....	101
<i>Kononov Anatolij, Pustovalova Marina</i>	
<b>FINITE ELEMENTS WITH CONTINUOUS STRESS FIELDS IN CALCULATION OF FOLDED PRISMATIC THIN-WALLED RODS AND SHELLS</b> .....	109
<i>Nazarenko Sergey, Blokhina Nina</i>	

<b>COMPARATIVE STUDY OF TWO ELASTO-PLASTIC WORK-HARDENING SPATIAL MODELS FOR CONCRETE</b> .....	115
<i>Lewinski Pawel M., Zygorowska Marta</i>	
<b>ASSESSMENT OF DURABILITY INDICATORS OF FLEXIBLE PAVEMENTS ON THE BASIS OF THE MECHANICAL-STATISTICAL METHOD</b> .....	124
<i>Tiraturyan Artem, Uglova Evgeniya</i>	
<b>THE METHOD OF LOCAL IMPACT FOR THE ANALYSIS OF STRUCTURES FOR PROGRESSIVE COLLAPSE</b> .....	132
<i>Saiyan Sergey, Paushkin Alexander</i>	
<b>CALCULATION OF THE STRESSED STATE OF A SOIL MASSIF IN THE FILTRATION OF A LIQUID FROM A POINT SOURCE</b> .....	138
<i>Andreev Vladimir, Avershyev Anatoliy</i>	
<b>STRESS-STRAIN STATE ANALYSIS OF STRUCTURES BASED ON THE MONITORING DATA</b> .....	144
<i>Sidorov Dmitriy, Dorozhinskiy Vladimir</i>	
<b>CALCULATION OF PLATES IN A GEOMETRICALLY NONLINEAR SETTING WITH THE USE OF GENERALIZED EQUATIONS OF FINITE DIFFERENCE METHOD</b> .....	150
<i>Uvarova Natalia, Gabbasov Radek</i>	
<b>ON THE DYNAMIC STABILITY OF A REINFORCED CONCRETE PLATE, TAKING INTO ACCOUNT THE MATERIAL CREEP</b> .....	158
<i>Kosheleva Elena</i>	
<b>DISCRETE DESIGN MODELS OF BUILDINGS AT DYNAMIC CALCULATION</b> .....	164
<i>Mondrus Vladimir, Shutovskiy Stanislav</i>	
<b>FEATURES OF THE NUMERICAL SOLUTION OF BOUNDARY VALUE PROBLEMS ON PYTHON ALGORITHMIC PROGRAMMING LANGUAGE</b> .....	172
<i>Mondrus Vladimir, Sizov Dmitrii</i>	
<b>SUDDEN CHANGE OF CONSTRAINTS IN SELECTED SUSPENDED STRUCTURES</b> .....	179
<i>Szczesniak Waclaw, Ataman Magdalena</i>	
<b>VERIFICATION OF THE REINFORCED CONCRETE BEAM MODEL BASED ON THE RESULTS OF A FULL-SCALE EXPERIMENTAL STUDY</b> .....	187
<i>Mkrtychev Oleg, Andreev Mikhail</i>	
<b>PROBLEM OF MODELLING A LAYERED MEDIUM TAKING INTO ACCOUNT THE CREEP OF ITS MATERIALS</b> .....	194
<i>Bobyleva Tatiana, Shamaev Alexei</i>	
<b>CONDITIONS OF EQUIVALENCE OF EFFECTS FOR THE SOLID BODY FROM INCOMPRESSIBLE MATERIAL</b> .....	202
<i>Agakhanov Elephan, Agakhanov Murad, Sultanova Lyudmila, Hizriyeva Zabiya</i>	
<b>APPLICATION OF DIGITAL IMAGE CORRELATION SYSTEM FOR ANALYSIS OF LOCAL PLASTIC INSTABILITIES OF PERFORATED THIN-WALLED BARS</b> .....	210
<i>Piotrowski Andrzej, Gajewski Marcin, Ajdukiewicz Cezary</i>	
<b>THE LIMIT STATES OF POLYMETALLIC PLATES WITH PIECEWISE ELLIPTIC CONTOURS</b> .....	218
<i>Nemirovskii Yuri</i>	
<b>THE INFLUENCE OF DEVIATION OF THE GEOMETRY OF THE MODEL ON THE ACCURACY OF RESEARCHING LOADS FROM WIND PRESSURE IN WIND TUNNELS</b> .....	224
<i>Egorychev Oleg, Nosyrin Vladislav, Radnaeva Marina, Fedosova Anastasia</i>	
<b>DEVIATORIC SECTION SHAPE FUNCTIONS FOR MATERIALS EXHIBITING DEPENDENCE ON SHEAR-TO-AXIAL YIELD STRESS RATIO</b> .....	230
<i>Szwed Aleksander</i>	
<b>STRESS-DEFORMED STATE IN THE PLANE DOMAIN BOUNDARY ANGLE CUTOUT ZONE</b> .....	239
<i>Frishter Ludmila</i>	
<b>HIGHER FREQUENCY DYNAMIC RESPONSE ANALYSIS OF THE FOAM CONCRETE BLOCK ELEMENT</b> .....	246
<i>Papán Daniel, Papánová Zuzana</i>	
<b>THE LONGITUDINAL-TRANSVERSE BENDING OF REINFORCED CONCRETE RODS</b> .....	252
<i>Nemirovskii Yury, Tikhonov Sergey</i>	
<b>DYNAMIC COMFORT INSIDE THE BUILDING DURING PEDESTRIAN TRAFFIC</b> .....	259
<i>Mkrtychev Oleg</i>	
<b>A GENERAL FORM OF DRUCKER-PRAGER TYPE SMOOTH AND CONVEX PLASTIC POTENTIAL. PART 1: DEFINITION AND FEATURES</b> .....	265
<i>Szwed Aleksander, Kaminska Inez</i>	

<b>A GENERAL FORM OF DRUCKER-PRAGER TYPE SMOOTH AND CONVEX PLASTIC POTENTIAL. PART 2: IMPLEMENTATION IN ELASTOPLASTIC DAMAGED MATERIAL .....</b>	<b>273</b>
<i>Kaminska Inez</i>	
<b>NUMERICAL IMPLEMENTATION OF THE MURNAGHAN MATERIAL MODEL IN ABAQUS/STANDARD .....</b>	<b>281</b>
<i>Jemiolo Stanislaw, Franus Aleksander</i>	
<b>NUMERICAL SIMULATIONS OF LOCAL AND GLOBAL BUCKLING OF HYPERELASTIC TUBES WITH DIFFERENT CROSS-SECTIONS .....</b>	<b>289</b>
<i>Kowalewski Lukasz, Jemiolo Stanislaw</i>	
<b>FINITE ELEMENT MODELING OF A MOVING LOAD USING CONTACT CONDITIONS.....</b>	<b>297</b>
<i>Gridnev Sergey, Ravodin Ilya</i>	
<b>DYNAMIC ANALYSIS OF RAILWAY TRACK WITH VIBRATION ISOLATED BOOTED SLEEPERS.....</b>	<b>305</b>
<i>Smirnov Vladimir</i>	
<b>REDUCTION OF THE BEARING CAPACITY OF A THIN-WALLED STEEL BEAM-COLUMN AS A RESULT OF UNIFORM CORROSION .....</b>	<b>311</b>
<i>Glinicka Aniela, Maciag Michal</i>	
<b>EVOLUTIONARY SPREADSHEET SOLVER IN OPTIMAL ENGINEERING DESIGN .....</b>	<b>317</b>
<i>Gajewski Ryszard Robert</i>	
<b>INFLUENCE OF BUILDINGS AERODYNAMIC CHARACTERISTICS ON THE CALCULATION OF INFILTRATION LOSSES RESULTS .....</b>	<b>323</b>
<i>Gribach Dmitry, Gribach Julia, Churin Pavel</i>	
<b>MODELLING OF SINGLE DEGREE OF FREEDOM SMA OSCILLATORS BY USING RHEOLOGICAL SCHEMES .....</b>	<b>328</b>
<i>Zbiciak Artur, Wasilewski Kacper</i>	
<b>NUMERICAL ANALYSIS OF BEAM RAIL BRIDGES WITH RANDOM TRACK IRREGULARITIES .....</b>	<b>336</b>
<i>Podworna Monika</i>	
<b>COMPUTATIONAL MODELS OF REINFORCED CONCRETE RIBBED FLOOR .....</b>	<b>344</b>
<i>Czumaj Przemyslaw, Dudziak Slawomir, Kacprzyk Zbigniew</i>	
<b>AN EFFICIENCY COMPARISON OF NUMERICAL IMPLEMENTATION APPROACHES OF HYPERELASTIC CONSTITUTIVE MODEL IN ABAQUS/STANDARD.....</b>	<b>352</b>
<i>Franus Aleksander, Kowalewski Lukasz</i>	
<b>SIMULATION OF VIBRATIONS OF A CONTINUOUSLY ELASTIC SUPPORTED ROD WITH VARYING BOUNDARY CONDITIONS UNDER THE ACTION OF A MOVABLE .....</b>	<b>360</b>
<i>Gridnev Sergey, Skalko Yuriy, Ravodin Ilya, Yanaeva Victoria</i>	
<b>NONLINEARITY IDENTIFICATION OF JESUS CHRIST THE KING MONUMENT ON THE BASIS OF MODAL PARAMETERS .....</b>	<b>368</b>
<i>Grosel Jacek, Marcinowski Jakub, Sawicki Wojciech, Wójcicki Zbigniew</i>	
<b>SELECTED ASPECTS OF NUMERICAL MODELLING IN PREDICTION OF BUILDING VIBRATIONS DUE TO TRAFFIC .....</b>	<b>374</b>
<i>Dudziak Slawomir, Kozyra Zofia</i>	
<b>VIBRATIONS OF A TIMOSHENKO BEAM ON AN INERTIAL FOUNDATION UNDER A MOVING LOAD .....</b>	<b>381</b>
<i>Ataman Magdalena</i>	
<b>STRESS-STRAIN STATE OF A THREE-LAYER ROD. COMPARISON OF THE RESULTS OF ANALYTICAL AND NUMERICAL CALCULATIONS WITH THE EXPERIMENT .....</b>	<b>387</b>
<i>Tsybin Nikita, Turusov Robert, Andreev Vladimir, Kolesnikov Alexey</i>	
<b>PROBABILISTIC ASSESSMENT OF PILE CAPACITY BASED ON CPTU PROBING INCLUDING RANDOM PILE FOUNDATION DEPTH.....</b>	<b>395</b>
<i>Wyjadlowski Marek, Baginska Irena, Reiner Jakub</i>	
<b>PREVENTION OF PROGRESSIVE UNCONTROLLED COLLAPSE OF A HIGH-RISE BUILDING .....</b>	<b>403</b>
<i>Shumeyko Viktor, Karamysheva Anna</i>	
<b>ANALYSIS OF THE CONSTRUCTIVE FEATURES OF THE EARTH DAM.....</b>	<b>409</b>
<i>Balzannikov Mikhail</i>	
<b>STATIC ANALYSIS OF A REINFORCED BIMODULUS BEAM ON ELASTIC FOUNDATION .....</b>	<b>415</b>
<i>Beskopylny Alexey, Kadomtseva Elena, Strelnikov Grigory</i>	
<b>ASSESSMENT METHODOLOGY OF CONCRETE CRACK RESISTANCE ON CEMENT BINDER .....</b>	<b>422</b>
<i>Popov Valeriy, Popov Dmitry, Davidenko Anna</i>	

<b>OPERATING CONDITIONS OF HYDRAULIC STRUCTURES AND RESULTS OF THEIR MULTI-FACTOR ANALYSIS.....</b>	<b>429</b>
<i>Romanov Alexey, Evdokimov Sergey, Orlova Alla</i>	
<b>CAVITATION RESEARCH RESULTS OF HYDROTURBINE IMPELLER BLADES AND THEIR ANALYSIS.....</b>	<b>436</b>
<i>Romanov Alexey, Evdokimov Sergey, Seliverstov Vladimir</i>	
<b>SELF-CONTAINED VENTILATION SYSTEM OF CIVIL BUILDINGS BUILT INTO WINDOW STRUCTURES.....</b>	<b>441</b>
<i>Kostuganov Arman, Vytchikov Yuri, Prilepskiy Andrey</i>	
<b>STAND-BY SPILLWAYS IN PHREATIC DAMS.....</b>	<b>447</b>
<i>Mikhasek Andrey, Rodionov Maxim, Malyugin Nikolay, Klimov Artem</i>	
<b>HIGH-STRENGTH REINFORCED CONCRETE MATRICES, HARDENING UNDER PRESSURE.....</b>	<b>452</b>
<i>Murashkin Gennadiy, Snegireva Antonina, Kretov Dmitriy</i>	
<b>DETERMINING INTERNAL FORCES IN MODULAR BUILDING ELEMENTS UNDER ACTION WIND LOAD.....</b>	<b>460</b>
<i>Shirokov* Viacheslav, Soloviev Alexey, Gordeeva Tatiana</i>	
<b>PIPE-CONCRETE COLUMNS OF BUILDINGS AND THEIR FIRE-RESISTANCE DETERMINATION.....</b>	<b>468</b>
<i>Ilyin Nikolay, Kondratyeva Nadezhda, Zaiko Vasily</i>	
<b>PROBLEMS OF TANK ROOFS RESISTANCE TO CORROSIVE ATTACKS.....</b>	<b>474</b>
<i>Mosesov Marat, Rybakova Larisa, Adykova Evgenia</i>	
<b>THE PROBLEM SOLUTION OF DEFORMABLE POWER SURFACES FROM ANISOTROPIC MATERIAL INTERACTION IN ELEMENTS OF STRUCTURE CONSTRUCTIONS.....</b>	<b>479</b>
<i>Ivanov Boris, Pischulev Alexander, Reazanova Galina</i>	
<b>FIRE SAFETY ISSUES IN THE DESIGN AND CONSTRUCTION OF HIGH-RISE BUILDINGS.....</b>	<b>487</b>
<i>Poliakova Tatiana, Grigoryan Marina</i>	
<b>CALCULATION METHODOLOGY OF TRANSLUCENT CONSTRUCTION ELEMENTS IN BUILDINGS AND OTHER STRUCTURES.....</b>	<b>491</b>
<i>Zubkov Vladimir, Kondratyeva Nadezhda</i>	
<b>STRESS-STRAIN BEHAVIOUR OF PRE-STRESSED SLABS OF OFF-SHUTTERING FORMATION REINFORCED BY CARBON FIBER.....</b>	<b>496</b>
<i>Panfilov Denis, Pischulev Alexander, Zhiltsov Yuriy</i>	
<b>USING RIGIDITY ELEMENTS TO STRENGTHEN ONE-STOREY BUILDINGS FRAMES.....</b>	<b>501</b>
<i>Veremeenko Oleg</i>	
<b>THE INFLUENCE OF RCA ADDITION ON SELECTED PARAMETERS OF CONCRETE.....</b>	<b>507</b>
<i>Jaskulski Roman, Supera Marcin, Kubissa Wojciech, Koteš Peter, Brodnan Miroslav</i>	
<b>STRESS-STRAIN STATE EXPERIMENTAL RESEARCHES OF THE LATTICE SUPPORT POLE SECTIONS FOR OVERHEAD POWER TRANSMISSION LINE 110 KV.....</b>	<b>514</b>
<i>Tanasoglo Anton, Garanzha Igor</i>	
<b>LOAD TESTING OF HIGHWAY BRIDGE.....</b>	<b>522</b>
<i>Bujnáková Petra, Jošt Jozef, Farbák Matúš</i>	
<b>CONTINUOUS PREFABRICATED CROSS-BEAMS MANUFACTURED BY USING OFF-SHUTTERING MOLDING TECHNOLOGIES.....</b>	<b>528</b>
<i>Prokopovich Anatoliy, Repekto Vladimir, Aleshin Andrey</i>	
<b>ANALYSIS THE EFFECTS OF LIGHTWEIGHT CONCRETE IN THE MIDDLE LAYER OF MULTI-LAYERED REINFORCED CONCRETE STRUCTURES ON THE STRESS-STRAIN STATE USING THE FINITE ELEMENT METHOD.....</b>	<b>536</b>
<i>Korol Elena, Dinh Tho Vu, Huy Hoang Nguyen</i>	
<b>NON-INVASIVE TESTS OF PRECAST CANTILEVER BALCONY IN OWT-67 SYSTEM.....</b>	<b>545</b>
<i>Bieranowski Piotr, Knyziak Piotr</i>	
<b>CREEP OF CONCRETE ACCORDING TO CREEP PREDICTION MODELS AND OWN RESEARCH.....</b>	<b>553</b>
<i>Wyppych Agnieszka, Klempka Krzysztof, Jedrzejczak Marek</i>	
<b>MATHEMATICAL MODELING OF GROUNDWATERS PRESSURE DISTRIBUTION IN THE UNDERGROUND STRUCTURES BY CYLINDRICAL FORM ZONE.....</b>	<b>559</b>
<i>Telichenko Valeriy, Rimshin Vladimir, Eremeev Vladimir, Kurbatov Vladimir</i>	
<b>THE DEFORMABILITY OF SHORT PILLARS IN VARIOUS LOADING OPTIONS AND EXTERNAL COMPOSITE REINFORCEMENT.....</b>	<b>566</b>
<i>Polskoy Petr, Georgiev Sergey, Muradyan Viktor, Shilov Aleksandr</i>	
<b>NEW REINFORCEMENT STRUCTURES OF REINFORCED CONCRETE FLOOR SLABS AND THEIR TECHNICAL AND ECONOMIC EFFICIENCY.....</b>	<b>574</b>
<i>Serbinovskiy Pavel, Mailyan Dmitry, Serbinovskiy Andrey</i>	

<b>ANALYSIS OF WINDOW MODEL ACCURACY AND ITS INFLUENCE ON THE RESULTS COMPARED TO THE MEASUREMENT</b> .....	581
<i>Juras Peter</i>	
<b>INFLUENCE ANALYSIS OF CLIMATE DATA TIME-STEP ON THE ACCURACY OF HAM SIMULATION</b> .....	588
<i>Juras Peter, Jurasova Daniela</i>	
<b>TECHNICAL AND ECONOMIC EFFICIENCY OF REINFORCED CONCRETE ELEMENTS WITH DIFFERENT TYPES OF REINFORCEMENT</b> .....	596
<i>Efimenko Ekaterina, Mailyan Liya, Muradyan Viktor</i>	
<b>ANALYSIS OF APPLICABILITY OF CLEGG IMPACT SOIL TESTER FOR CLAYEY SOILS</b> .....	601
<i>Vlcek Jozef, Valaskova Veronika</i>	
<b>DYNAMIC ANALYSIS OF STRENGTH AND HUMAN-COMFORT LEVEL OF THE FOOTBALL STADIUM STRUCTURES AT COORDINATED MOVEMENTS OF AUDIENCE</b> .....	608
<i>Bulushev Sergey, Bunov Artem</i>	
<b>APPLICATION OF CBR SYSTEMS IN THE PROCESS OF ENERGY RETROFIT OF SINGLE-FAMILY DETACHED HOUSES</b> .....	616
<i>Weglarz Arkadiusz, Gilewski Pawel</i>	
<b>NUMERICAL ANALYSIS OF STRENGTHENING CONCRETE COLUMNS BY HIGH PERFORMANCE FIBRE CONCRETE</b> .....	624
<i>Vavruš Martin, Koteš Peter, Tamrazyan Ashot</i>	
<b>TO THE DETERMINATION OF HEAT EXCHANGE CONDITIONS NEAR THE INNER SURFACE OF WALLS WITH REFLECTIVE THERMAL INSULATION FROM ALUMINIUM FOIL</b> .....	630
<i>Umnyakova Nina, Gandzhuntsev Mikhail</i>	
<b>DESIGNING REINFORCED CONCRETE SLABS UNDER FIRE CONDITION</b> .....	636
<i>Maciag Michal, Spodzieja Szymon</i>	
<b>THE REFINED THEORY OF ELASTIC PLATES AS ASYMPTOTIC APPROACH OF 3D PROBLEM</b> .....	644
<i>Rogacheva Nelly</i>	
<b>EVALUATING CONTAINMENT OPERATIONAL RELIABILITY OF NUCLEAR POWER PLANT UNITS WITH THE VVER-1000 REACTOR IN OPERATION</b> .....	650
<i>Pimshin Yuri, Zayarov Yuri, Zabaznov Yuri, Naumenko Galina</i>	
<b>ASSESSMENT OF SHEAR CAPACITY. PART I: COMPARISON OF SHEAR MODELS USED FOR RC BEAMS DESIGN</b> .....	655
<i>Wlodarczyk Maria, Czumaj Przemyslaw</i>	
<b>ASSESSMENT OF SHEAR CAPACITY. PART II: EXPERIMENTAL TEST</b> .....	663
<i>Wlodarczyk Maria</i>	
<b>CONSERVATION OF IRREGULAR STONE MASONRY IN TANAIS IN RUSSIA</b> .....	669
<i>Terlikowski Wojciech, Matera Marcin, Wasilewski Kacper, Gregoriou-Szczepaniak Martyna, Sobczynska Ewa</i>	
<b>EVALUATION OF THE REVITALIZATION CAPACITY OF THE HISTORIC BUILDING AS AN EXAMPLE OF INTERDISCIPLINARY DIAGNOSTICS</b> .....	676
<i>Terlikowski Wojciech</i>	
<b>EVALUATION OF FIRE DAMAGE TO THE STEEL STRUCTURE OF AN INDUSTRIAL SHED</b> .....	684
<i>Lutomirsk Marta, Lutomirski Szczepan</i>	
<b>SIMULATION AND MEASUREMENT OF MICROCLIMATE IN ROOF SPACE ON A GOTHIC TRUSS CONSTRUCTION</b> .....	692
<i>Ponechal Radoslav, Krušinský Peter, Pisca Peter, Korenková Renáta</i>	
<b>IN-SITU EXAMINATION OF THE CONCRETE QUALITY EUROPEAN STANDARD APPROACH</b> .....	700
<i>Moczko Andrzej, Moczko Marta</i>	
<b>TESTING PROCEDURES OF THE UNDER SLEEPER PADS APPLIED IN THE BALLASTED RAIL TRACK SYSTEMS</b> .....	708
<i>Kraskiewicz Cezary, Oleksiewicz Wojciech, Pludowska-Zagrajek Monika, Piotrowski Andrzej</i>	
<b>ON FORCE DISTRIBUTION IN THE STAPLE CONNECTIONS OF WOOD BASED PANELS WITH OSB COVERS</b> .....	716
<i>Al Sabouni-Zawadzka Anna, Gilewski Wojciech, Pelczynski Jan</i>	
<b>ELABORATION OF TESTING TECHNIQUE OF FLAT SLABS ON PUNCHING SHEAR STRENGTH USING FINITE ELEMENT MODELING</b> .....	724
<i>Filatov Valery, Galyautdinov Zulfat, Suvorov Alexander</i>	
<b>EXPERIMENTAL STUDIES OF COMPLIANCE OF VERTICAL JOINTS USED IN CONSTRUCTION OF HIGH-RISE PANEL BUILDINGS</b> .....	730
<i>Shuvalov Aleksandr, Gorbunov Igor, Kovalev Mikhail, Faizova Adelia</i>	

<b>ANALYSIS OF CHANGES OF FORCES AND NORMAL STRESS IN EXTRADOSED TENDONS OF THE MS-3B BRIDGE LOCATED ON THE RING ROAD IN OSTRÓDA .....</b>	<b>738</b>
<i>Stefanowski Tadeusz, Supel Piotr, Trochymiak Wojciech</i>	
<b>SYSTEMS WITH RIGIDITY CORES AND HIGH-RISE BUILDINGS OUTRIGGERS .....</b>	<b>746</b>
<i>Shumeyko Viktor, Karamysheva Anna</i>	
<b>PRINCIPLES OF PROCESS MODELING OF THE HEAT SUPPLY SYSTEMS OPERATION .....</b>	<b>752</b>
<i>Doroshenko Anna, Yusupova Anastasiya</i>	
<b>USE OF DRILLING MUDS FOR REMEDIATION.....</b>	<b>758</b>
<i>Galitskova Yulia</i>	
<b>CALCULATING METHODOLOGY OF LARGE BASE SLABS: COMPRESSIBLE STRATA CAPACITY AND FOUNDATION SETTLEMENT .....</b>	<b>764</b>
<i>Isaev Veniamin, Maltsev Andrey, Karpov Andrey</i>	
<b>EVALUATION CRITERIA OF LANDSLIDE STABILITY .....</b>	<b>772</b>
<i>Simonyan Vladimir, Labuznov Alexander</i>	
<b>ASSESSMENT OF SANDY SOIL WATER PERMEABILITY METHODS .....</b>	<b>778</b>
<i>Nikitin Andrey</i>	
<b>RELIABILITY-ORIENTED METHOD OF FLEXIBLE PAVEMENT MANAGEMENT .....</b>	<b>784</b>
<i>Uglova Evgenia, Tiraturyan Artem, Aslanyan Grigory</i>	
<b>COMPACTION OF WATER-SATURATED SOIL BY SURFACE VACUUMING .....</b>	<b>792</b>
<i>Cherkasova Lyudmila</i>	
<b>INVESTIGATION OF CHANGES IN THE GEOMECHANICAL PROPERTIES OF OIL-CONTAMINATED SAND IN GEOTECHNICAL CONSTRUCTION.....</b>	<b>797</b>
<i>Manko Arthur</i>	

## PART 2

<b>INVESTIGATIONS OF THE REGULARITY OF THE FORMATION OF A DIP OVER THE MINE.....</b>	<b>804</b>
<i>Dolzhikov Peter, Prokopov Albert, Prokopova Marina, Hamidullina Natalya</i>	
<b>APPLICATION OF THE CARTOGRAPHIC METHOD OF RESEARCH FOR THE DETECTION OF THE DANGEROUS ZONES OF MINING INDUSTRIAL TERRITORIES .....</b>	<b>810</b>
<i>Prokopov Albert, Zhur Vyacheslav, Medvedev Andrey</i>	
<b>DETECTION OF FATIGUE DAMAGE IN LONG-SPAN REINFORCED CONCRETE STRUCTURES .....</b>	<b>817</b>
<i>Rubtsov Igor, Alisultanov Ramidin, Zinatullin Alexander, Midrigan Nikolay</i>	
<b>THE METHOD OF THE EXAMINATION OF DANGEROUS STRUCTURES AND REHABILITATION OF THEIR ROBUSTNESS .....</b>	<b>826</b>
<i>Gubeladze Avtandil, Yagovkina Elena, Gubeladze Ivan</i>	
<b>GEODETIC BASIS USED DURING THE REMEDIATION OF STREČNO CLIFF .....</b>	<b>834</b>
<i>Seidlová Anna, Šíma Jaroslav, Chromcák Jakub</i>	
<b>POSSIBILITIES OF CONTINUAL MEASUREMENT ALIGNMENT .....</b>	<b>840</b>
<i>Chromcák Jakub</i>	
<b>IMPACT OF LAND-COVER CHANGE RELATED TO URBANIZATION ON SURFACE RUNOFF ESTIMATION .....</b>	<b>845</b>
<i>Gilewski Paweł, Weglarz Arkadiusz</i>	
<b>FOOTINGS OF RESIDENTIAL BUILDINGS, ERECTED ON CLAY SOILS WITH ORGANIC CONTENT .....</b>	<b>851</b>
<i>Chunuyuk Dmitry, Kopteva Olga</i>	
<b>ANALYSIS OF STABILITY OF RAILWAY EMBANKMENT INCLUDING HORIZONTAL FORCES IN LIGHT OF EUROCODE .....</b>	<b>859</b>
<i>Brzezinski Karol, Rybicki Tomasz, Józefiak Kazimierz</i>	
<b>COMBINATORIAL ALGORITHM IN LINEAR MODEL.....</b>	<b>867</b>
<i>Ižvoltová Jana, Písca Peter</i>	
<b>CALCULATION OF FOUNDATION SETTLEMENT ON A OVERCONSOLIDATED BASE .....</b>	<b>874</b>
<i>Ter-Martirosyan Armen, Luzin Ivan</i>	
<b>SETTLEMENT AND BEARING CAPACITY OF THE CIRCULAR FOUNDATION .....</b>	<b>880</b>
<i>Ter-Martirosyan Zaven, Sidorov Vitalii</i>	
<b>INTERACTION OF THE PILE WITH THE SAGGING LOESS SOIL .....</b>	<b>886</b>
<i>Ter-Martirosyan Zaven, Luzin Ivan</i>	
<b>DYNAMIC STABILITY ANALYSIS AND BASIC ACTION FOR STRUGGLE WITH DYNAMIC SOIL LIQUEFACTION .....</b>	<b>894</b>
<i>Sobolev Evgeny, Buslov Anatoly</i>	



<b>THE MANAGEMENT OF STRESS-STRAIN STATE OF THE BASES FOR STABILIZING UNEVEN SETTLEMENTS</b> .....	900
<i>Ter-Martirosyan Armen, Sidorov Vitalii</i>	
<b>APPLICATION OF GEOTEXTILE ROPES IN SLOPE EROSION PROTECTION</b> .....	907
<i>Nguyen Giang, Broda Jan, Grzybowska-Pietras Joanna</i>	
<b>INFLUENCE OF SOIL SPECIMEN PREPARATION ON RESULTS OF ITS ORGANIC MATTER CONTENT LABORATORY DETERMINATION</b> .....	915
<i>Nguyen Giang</i>	
<b>REGULARIZED SINGULAR BOUNDARY METHOD FOR GROUNDWATER FLOW IN A COFFERDAM</b> .....	923
<i>Mužík Juraj, Bulko Roman</i>	
<b>FREE SURFACE GROUNDWATER FLOW SOLUTION USING BOUNDARY COLLOCATION METHODS</b> .....	930
<i>Mužík Juraj, Bulko Roman</i>	
<b>INNOVATIVE COMPONENTS OF SUSTAINABLE DEVELOPMENT IN CONSTRUCTION</b> .....	938
<i>Lazareva Natalia</i>	
<b>OPTIMAL RESOURCE ALLOCATION OF THE SERVICING COMPANIES IN THE FIELD OF HOUSING AND PUBLIC UTILITIES ON THE BASIS OF THE THEORY OF MULTIPHASE QUEUEING SYSTEMS</b> .....	946
<i>Khayrullin Rustam</i>	
<b>DEEP BED FILTRATION WITH MULTIPLE PORE-BLOCKING MECHANISMS</b> .....	952
<i>Kuzmina Liudmila, Osipov Yuri</i>	
<b>APPLICATION OF GEOGRAPHIC INFORMATION SYSTEM FOR FORWARD PLANNING OF THE RUSSIAN FEDERATION SUBJECT RURAL AREAS</b> .....	958
<i>Sheina Svetlana, Fedorovskaya Albina, Serdiukova Anastasia</i>	
<b>MODIFICATION OF WOOD WITH MONOETHANOLAMINO-BORATE BY THE DATA OF X-RAY PHOTOELECTRON SPECTROSCOPY</b> .....	965
<i>Stepina Irina, Kotlyarova Irina</i>	
<b>LIGHTWEIGHT CONCRETE OF CONTINUOUS STRUCTURE WITHOUT FINE AGGREGATE</b> .....	972
<i>Chiknovoryan Alexandr, Mizuryaev Sergey, Zhigulina Anna</i>	
<b>COMPLEX CHARACTERISTIC FOR FORECASTING DURABILITY OF HYDRAULIC CONCRETE</b> .....	977
<i>Popov Valeriy, Popov Dmitry, Davidenko Anna</i>	
<b>APPLICATION OF CONCRETE DEFORMATION MODEL FOR CALCULATION OF BEARING CAPACITY OF REINFORCED CONCRETE STRUCTURES</b> .....	982
<i>Murashkin Vasilii, Murashkin Gennadiy</i>	
<b>ANALYZING BUILDING MATERIALS AND THEIR PROPERTIES IN CONNECTION WITH THE THEORY OF EXPERIMENT PLANNING</b> .....	989
<i>Dormidontova Tatiana, Filatova Anastasiya</i>	
<b>SPECIFIC UTILIZATION METHODS OF HIGH-MELTING WASTES FROM THE ENTERPRISES OF CHEMISTRY AND NON-FERROUS METALLURGY</b> .....	996
<i>Khlystov Aleksey, Shirokov Vladimir, Vlasova Elena</i>	
<b>OVERFLOWING PHREATIC DAMS BUILT WITH THE USE OF MODERN COMPOSITE MATERIALS</b> .....	1003
<i>Mikhasek Andrey, Rodionov Maxim, Litvinova Margarita, Mingafin Rinat</i>	
<b>NANO-LEVEL MANAGEMENT OF CALCIUM SILICATE-HYDRATE NANOPARTICLES STRUCTURE FORMATION DURING PORTLAND CEMENT HYDRATION PROCESS</b> .....	1011
<i>Guryanov Alexander, Kozlov Vyacheslav, Sidorenko Yulia</i>	
<b>PECULIAR FEATURES OF SILICATE MATERIALS CURING</b> .....	1018
<i>Sidorenko Yulia, Guryanov Alexander, Kozlov Vyacheslav</i>	
<b>USING THE CALCULATION METHOD FOR LOW-MELTING CLAY ASSESSMENT</b> .....	1023
<i>Chumachenko Natalia, Turnikov Vladimir, Kuzmin Vladimir</i>	
<b>APPLICATION OF MONOLITHIC FOAM CONCRETE IN BUILDING ENVELOPES OF A COTTAGE, USED IN CONDITIONS OF INTERMITTENT HEATING</b> .....	1028
<i>Vytchikov Yuri, Saparev Mikhail, Golikov Vladislav</i>	
<b>STUDYING PENETRATING ABILITY OF ALKALINE FLOW SOLUTION OF CAPROLACTAM PRODUCTION IN FLINT AGGREGATE</b> .....	1033
<i>Chumachenko Natalia, Kizilova Diana, Hafizov Ilnur</i>	
<b>COMPOSITION AND EARLY-AGE TEMPERATURE REGIME IN MASSIVE CONCRETE FOUNDATION</b> .....	1038
<i>Van Tang Lam, Trong Nguyen Chuc, Bulgakov Boris, Ngoc Pham Anh</i>	

<b>ON EFFECT OF SUPERPLASTICIZERS AND MINERAL ADDITIVES ON SHRINKAGE OF HARDENED CEMENT PASTE AND CONCRETE .....</b>	<b>1046</b>
<i>Nesvetaev Grigory, Koryanova Yulia, Zhilnikova Tatiana</i>	
<b>ANALYTICAL DESCRIPTION OF PHYSICAL AND TECHNICAL PARAMETERS OF A BENDING REINFORCED CONCRETE STRUCTURE, INFLUENCING REINFORCEMENT FIRE RESISTANCE.....</b>	<b>1053</b>
<i>Ilyin Nikolay, Panfilov Denis, Gorshkalev Pavel</i>	
<b>STRATEGIES TO LINK RURAL AREAS TO EUROPEAN AND NATIONAL TRANSPORT NETWORKS.....</b>	<b>1060</b>
<i>Sitányiová Dana, Masarovicová Sona, Berselli Daniele, Nicolini Antonio</i>	
<b>CALCULATION OF THE FILTRATION AT THE POROUS MEDIUM OUTLET .....</b>	<b>1068</b>
<i>Osipov Yuri, Safina Galina, Vetoshkin Nikita</i>	
<b>"GREEN" STANDARDS WILL ENSURE SAFE LIVING ENVIRONMENT.....</b>	<b>1076</b>
<i>Slesarev Mikhail, Dinh Dap Nguyen</i>	
<b>METHODS OF ESTIMATING RESERVES OF PRODUCTIVITY GROWTH.....</b>	<b>1084</b>
<i>Oleinik Pavel, Kuzmina Tatyana</i>	
<b>METHODS OF EVALUATION OF ORGANIZATIONAL DECISIONS .....</b>	<b>1092</b>
<i>Oleinik Pavel, Cherednichenko Nadezhda</i>	
<b>TECHNICAL SOLUTIONS FOR IMPROVING THE SAFETY OF HOUSING AND COMMUNAL SERVICES .....</b>	<b>1099</b>
<i>Galitskova Yulia, Balzannikov Mikhail</i>	
<b>THE APPLIANCE OF PREFABRICATED SOIL-CEMENT SLABS PROCESSED WITH A HYDROPHOBIZING MATERIAL FOR THE ROAD CONSTRUCTION .....</b>	<b>1105</b>
<i>Sannikov Sergey, Kuyukov Sergey, Zamyatin Alexey, Zhigailov Alexandr</i>	
<b>SIMULATION CURVES OF SCOOPING AND DIGGING GRAB .....</b>	<b>1112</b>
<i>Tsipurskiy Ilya</i>	
<b>GYPSUM EXPANDED CLAY CONCRETE FOR EXTERNAL WALLS .....</b>	<b>1120</b>
<i>Panchenko Alexander, Kozlov Nikita</i>	
<b>FORMATION OF THE ORGANIZATIONAL-MANAGERIAL MODEL OF RENOVATION OF URBAN TERRITORIES .....</b>	<b>1127</b>
<i>Topchiy Dmitriy, Tokarskiy Andrey</i>	
<b>REGARDING SOME ASPECTS OF THE REORGANIZATION OF BUILDINGS IN THE "HUMAN-TECHNOLOGY-NATURE" SYSTEM.....</b>	<b>1135</b>
<i>Kazaryan Ruben, Khvan Vitaly</i>	
<b>RESOURCE-SAVING MATERIALS BASED ON HYDROPHOBIC LOW WATER DEMAND BINDER .....</b>	<b>1142</b>
<i>Tkach Evgeniya, Sadchikova Yuliya</i>	
<b>RASPBERRY PI 3B + MICROCOMPUTER AS A CENTRAL CONTROL UNIT IN INTELLIGENT BUILDING AUTOMATION MANAGEMENT SYSTEMS .....</b>	<b>1149</b>
<i>Saluch Mateusz, Tokarski Daniel, Grudniewski Tomasz, Chodyka Marta, Nitychoruk JerzyAntoni, Wolinski Pawel, Jaworska Beata, Adamczewski Grzegorz</i>	
<b>SYNTHESIS OF HIGH-PRECISION HYDRAULIC CONTROL SYSTEMS OF AN EXCAVATOR.....</b>	<b>1155</b>
<i>Galitskov Konstantin, Galitskov Stanislav, Dudanov Ivan</i>	
<b>MODELING OF PROPORTIONS AND PREDICTION OF PROPERTIES OF MACADAM AND SAND MIXES STABILIZED WITH MINERAL BINDERS WITH THE ANT ADDITIVE.....</b>	<b>1162</b>
<i>Matua Vakhtang, Sizonets Sergey, Stroev Dmitry</i>	
<b>MODELING OF STRUCTURING PROCESSES AT HARDENING OF EXPANDING CEMENTS AND CONCRETES ON THEIR BASIS.....</b>	<b>1170</b>
<i>Kharchenko Igor, Panchenko Alexander, Kharchenko Alexey, Alekseev Vyacheslav</i>	
<b>DRAINAGE MATERIAL PRODUCED FROM ROOFING WASTE .....</b>	<b>1178</b>
<i>Lyapidevskaya Olga</i>	
<b>TRANSIENT METHOD MEASURED THERMAL PROPERTIES OF CONCRETE WITH MICROSOPHERES AND LATEX BASED ADDITION .....</b>	<b>1185</b>
<i>Jaskulski Roman, Kubissa Wojciech</i>	
<b>IMPACT OF BITUMEN COMPOSITION ON EMPIRICAL PROPERTIES .....</b>	<b>1191</b>
<i>Remišová Eva, Holý Michal</i>	
<b>VISCOSITY AS A POSSIBLE SUPPLEMENT TO THE EMPIRICAL TESTS OF BITUMEN .....</b>	<b>1199</b>
<i>Holý Michal, Remišová Eva</i>	
<b>APPLICATION OF METHODS OF THE THEORY OF MULTIPHASE QUEUEING SYSTEMS TO THE PROBLEMS OF OPTIMIZING THE RESOURCES OF SERVICE COMPANIES IN THE FIELD OF HOUSING SECTOR .....</b>	<b>1207</b>
<i>Khayrullin Rustam, Myasnikov Alexey</i>	

<b>ASSESSMENT OF THE BUSINESS POTENTIAL IMPACT ON THE CONTROLLABILITY OF AN INVESTMENT-CONSTRUCTION PROJECT</b> .....	1213
<i>Sheina Svetlana, Tsopa Natalya, Kovalskaya Lubov</i>	
<b>EFFECT OF THE CHUTE OSCILLATIONS FREQUENCY ON THE SPEED OF INERTIAL-CONVEYOR TRANSPORTATION OF CONCRETE MIX</b> .....	1221
<i>Osmanov Sergey G.</i>	
<b>INVESTMENT AND CONSTRUCTION PROJECT MATRIX AS THE BASIS OF FORMING THE HIGHLY EFFECTIVE ORGANIZATIONAL STRUCTURE</b> .....	1227
<i>Morozenko Andrey</i>	
<b>ANALYSIS OF SELECTED PROPERTIES OF WARMING SYSTEM PREPARED WITH VARIOUS PLASTERING MORTAR</b> .....	1235
<i>Godlewska Wioletta, Koper Artur</i>	
<b>SCHEDULING CONSTRUCTION PROJECTS UNDER FUZZY MODELLING OF RESOURCE CONSTRAINTS</b> .....	1243
<i>Kulejewski Janusz, Ibadov Nabi, Krzeminski Michal</i>	
<b>A MODEL OF TWO-VELOCITY PARTICLES FILTRATION WITH VARIABLE INJECTION</b> .....	1251
<i>Galagus Yuri, Safina Galina</i>	
<b>QUANTIFICATION OF THE NOISE CHARGES FOR THE SELECTED ROAD NETWORK SECTIONS</b> .....	1258
<i>Margorínová Martina, Lep Marjan, Trojanová Mária</i>	
<b>DECORATIVE COATINGS BASED ON THE PROCESSING OF FINE WASTE CRUSHING CONCRETE SCRAP</b> .....	1267
<i>Tkach Evgeniya, Nurbaturov Kanapiya, Kulibayev Askar</i>	
<b>THE INFLUENCE OF CONSTRUCTION AND MATERIAL SOLUTIONS ON THE LEVEL OF AIR TIGHTNESS IN SINGLE ENERGY BUILDINGS</b> .....	1275
<i>Miszczuk Artur</i>	
<b>COMPARATIVE CHARACTERISTICS OF BINDERS RESISTANCE FOR BUILDING COMPOSITES TO MOLD FUNGI</b> .....	1283
<i>Nelyubova Viktoria, Strokova Valeria, Vasilenko Marina, Rykunova Marina, Danakin Dmitry</i>	
<b>THE USE OF RECYCLED WASTE PRODUCTS IN A SUSTAINABLE HOUSE DESIGN - A CASE STUDY</b> .....	1291
<i>Iringová Agnes</i>	
<b>SURFACE MODIFICATION OF MINERAL FILLER USING NANOPARTICLES FOR ASPHALT APPLICATION</b> .....	1298
<i>Inozemtsev Sergey, Korolev Evgeniy</i>	
<b>USING APPARATUS WITH VORTEX LAYER OF FERROMAGNETIC PARTICLES FOR PRODUCTION OF UNBURNT SYNTHANITE</b> .....	1307
<i>Kaklyugin Alexander, Trishchenko Inna, Kozlov Alexander, Kastomykh Lyubov</i>	
<b>PRIORITY LOCAL CRITERIA FOR CHOOSING OF BUILDING TECHNOLOGY</b> .....	1313
<i>Zholobova Elena</i>	
<b>THE RESEARCH ON THE SIFTING FROM PROCESSING OF EAST DONBASS REFUSE HEAP FOR MANUFACTURING WALL CERAMICS GOODS</b> .....	1319
<i>Yavruyan Khungianos, Gaishun Evgeny, Teryokhina Yuliya, Kotlyar Vladimir</i>	
<b>METHODOLOGICAL AND ORGANIZATIONAL PROBLEMS OF PROFESSIONAL RISK MANAGEMENT IN CONSTRUCTION</b> .....	1324
<i>Sugak Evgeny</i>	
<b>EFFECTS OF WATERJET CUTTING WASTE ADDITION ON PROPERTIES OF BUILDING CERAMICS</b> .....	1332
<i>Skanavi Natalia, Dovydenko Timofei</i>	
<b>CALIBRATION OF TEST PROBES AND EXPERIMENTAL MONITORING OF CHANGES IN MOISTURE OF SELECTED MATERIALS OF SUBGRADE STRUCTURES</b> .....	1339
<i>Dobeš Peter, Ižvolt Libor, Mecár Martin</i>	
<b>THE THERMAL STRESS OF ROLLER-COMPACTED CONCRETE DAMS DURING CONSTRUCTION</b> .....	1347
<i>Aniskin Nikolay, Nguyen Trong Chuc</i>	
<b>INCREASING THE TRACKS EFFICIENCY BY USING ENERGY-SAVING OILS IN TRANSMISSION AND ENGINE</b> .....	1355
<i>Ponomarenko Anatoliy, Boiko Mikhail, Lyashenko Mikhail, Dudnik Vitaly</i>	
<b>COMPOSITE GROUTING MORTAR BASED ON 3D-NKM - NANOCRYSTALLINE INOCULANT</b> .....	1361
<i>Panfilova Marina, Zubrev Nikolay, Novoselova Olga, Efremova Sania</i>	

<b>THE INFLUENCE OF THE MINERAL ADDITIVES ON THE CARBONATION OF CEMENT COMPOSITES.....</b>	1369
<i>Wolinski Pawel, Woyciechowski Piotr, Jaworska Beata, Adamczewski Grzegorz, Tokarski Daniel, Grudniewski Tomasz, Chodyka Marta, Antoni Nitychoruk Jerzy</i>	
<b>SUSTAINABLE MAINTENANCE OF LOW LEVEL ROAD NETWORK.....</b>	1376
<i>Mikolaj Jan, Remek L'uboš</i>	
<b>NATURAL RADIOACTIVITY OF FINISH AND MASONRY MATERIALS.....</b>	1384
<i>Buzina Daria, Engovatov Igor, Dap Nguyen Dinh, Ovakimyan Artur</i>	
<b>ENVIRONMENTAL SAFETY MANAGEMENT OF URBAN BUILDING BY REGULATION OF FORMATION PROCESS OF EXHAUST GASES OF MOTOR VEHICLES.....</b>	1389
<i>Badalyan Liparit, Kurdjukov Vladimir, Ovcharenko Alla</i>	
<b>INSIGHTS INTO THE STATE OF AFFAIRS AND POSSIBLE WAYS TO IMPROVE SECONDARY MATERIAL WASTE MANAGEMENT .....</b>	1395
<i>Velichko Evgeniy, Tskhovrebov Eduard</i>	
<b>AUTOMATION OF OPTIMIZATION OF DISCRETE TECHNOLOGICAL PROCESSES .....</b>	1400
<i>Kudryavtsev Evgeniy</i>	
<b>INNOVATIVE METHODS OF STRENGTHENING REINFORCED CONCRETE STRUCTURES .....</b>	1407
<i>Mailyan Dmitry, Bogomazyuk Darya</i>	
<b>STUDY OF THE ABRASION RESISTANCE OF WOOD-POLYMER COMPOSITES AND MIXTURES OF ABS-PLASTIC WITH POLYVINYL CHLORIDE.....</b>	1413
<i>Matseevich Andrey, Matseevich Tatyana, Askadskii Andrey</i>	
<b>RESOURCE-SAVING TECHNOLOGIES FOR CLEANING GAS EMISSIONS IN THE PRODUCTION OF BUILDING MATERIALS.....</b>	1419
<i>Skorik Tatiana, Galkina Natalia, Glazunova Elena</i>	
<b>ANALYSIS OF PHYSICAL AND MECHANICAL PROPERTIES OF VACUUM TREATED CLAYDITE-CONCRETE .....</b>	1424
<i>Khubaev Alan, Bidov Tembot, Rybakova Alina</i>	
<b>WATER PERMEABILITY OF ARGILLITE-BASED CERAMIC TILES.....</b>	1431
<i>Lazareva Yana, Kotlyar Anton, Orlova Marina, Lapunova Kira</i>	
<b>THE POLLUTION PREVENTION DURING THE CIVIL CONSTRUCTION.....</b>	1437
<i>Azarov Valery, Manzhilevskaya Svetlana, Petrenko Lubov</i>	
<b>THE ECONOMIC AND TECHNOLOGICAL EFFICIENCY OF BUILDING PRODUCTION IN VIEW OF CONTEMPORARY INDUSTRIAL BUILDING MATERIALS .....</b>	1444
<i>Tsapko Konstantin</i>	
<b>SOLAR-VORTEX POWER PLANTS: PRINCIPLES OF EFFECTIVE WORK AND TECHNICAL REQUIREMENTS ON THE PREPARATION OF INITIAL DATA FOR DESIGN.....</b>	1450
<i>Solovyev Alexander, Solovyev Dmitry, Shilova Liubov</i>	
<b>ANALYSIS OF THE EFFICIENCY OF LOW NOISE BARRIER USING STERED MATERIAL .....</b>	1456
<i>Zvolenský Peter, Pultznerová Alžbeta, Grecník Juraj</i>	
<b>MEASUREMENTS AND FIRE SIMULATION MODELS IN ROAD TUNNELS .....</b>	1464
<i>Danišovic Peter, Šrámek Juraj, Hodon Michal, Glasa Ján, Weisenpacher Peter, Valášek Lukáš</i>	
<b>ECONOMIC JUSTIFICATION OF THE CHOICE OF THE THERMAL PROTECTION OF BUILDINGS.....</b>	1470
<i>Malyavina Elena, Frolova Anastasya</i>	
<b>LIFE CYCLE EQUIVALENT ANNUAL COST (LCEAC) AS A COMPARATIVE INDICATOR IN THE LIFE CYCLE COST ANALYSIS OF BUILDINGS WITH DIFFERENT LIFETIMES .....</b>	1477
<i>Plebankiewicz Edyta, Zima Krzysztof, Wieczorek Damian</i>	
<b>AIR TRITIA TRANSPORT MODEL .....</b>	1485
<i>Drliciac Marek, Celko Ján</i>	
<b>POTENTIAL FOR THE USE OF INFORMATION SYSTEMS IN THE MANAGEMENT OF CONSTRUCTION WASTE .....</b>	1493
<i>Aleksanin Aleksandr</i>	
<b>THREE-DIMENSIONAL MOBILE MAPPING SYSTEM AND ITS USE IN ROAD ENGINEERING.....</b>	1498
<i>Florkova Zuzana, Duris Lukas, Veselovsky Michal, Sedivý Stefan, Kovalova Dasa</i>	
<b>DEVELOPMENT AND ASSESSMENT OF VR/AR SOLUTION FOR VERIFICATION DURING THE CONSTRUCTION PROCESS.....</b>	1505
<i>Protchenko Kostiantyn, Dabrowski Piotr, Garbacz Andrzej</i>	
<b>OPTIMIZATION OF THERMAL STABILITY OF STRUCTURAL ELEMENTS OF HIGH-RISE BUILDINGS TO INCREASE THEIR ENERGY EFFICIENCY .....</b>	1511
<i>Giyasov Botir, Semenov Vyacheslav, Giyasova Irina</i>	

<b>INFLUENCE OF ADDITIVES ON PROPERTIES OF CONCRETE WITH RECYCLED AGGREGATE AND FLY ASH.....</b>	1519
<i>Wydra Małgorzata</i>	
<b>DEVELOPMENT OF TECHNICAL AND ECONOMIC SYSTEMS IN CONSTRUCTION AND THEIR HOMEOSTATIC BALANCE.....</b>	1527
<i>Sborshikov Sergey, Bobin Alexey</i>	
<b>DEVELOPMENT OF INNOVATIVE HFRP BARS.....</b>	1535
<i>Protchenko Kostiantyn, Szmigiera Elzbieta, Urbanski Marek, Garbacz Andrzej</i>	
<b>COST MINIMIZATION OF LOCATING CONSTRUCTION MACHINERY PARK WITH THE USE OF SIMULATION AND OPTIMIZATION ALGORITHMS .....</b>	1541
<i>Anysz Hubert, Zawistowski Jacek</i>	
<b>USE OF PAIRWISE COMPARISON METHOD IN ROAD-AND-BRIDGE TENDERS .....</b>	1549
<i>Bucholc Karol, Koczkodaj Waldemar W., Trochymiak Wojciech</i>	
<b>RESIDENTIAL BUILDINGS CONCEPTUAL COST ESTIMATES WITH THE USE OF SUPPORT VECTOR REGRESSION .....</b>	1557
<i>Juszczuk Michal</i>	
<b>ANALYSIS OF THE INTERACTION BETWEEN RISK FACTORS FOR CONSTRUCTION WORKS ON AN EXAMPLE OF THE SMALL EXPERIENCE OF LABOURERS.....</b>	1564
<i>Kaczorek Krzysztof, Malara Jaroslaw</i>	
<b>VALUE ENGINEERING METHOD IN POLISH CONSTRUCTION .....</b>	1571
<i>Lesniak Agnieszka, Lendo-Siwicka Marzena</i>	
<b>TOWARDS UNUSUAL MECHANICAL PROPERTIES OF TENSEGRITY LATTICE METAMATERIAL .....</b>	1578
<i>Al Sabouni-Zawadzka Anna, Gilewski Wojciech</i>	
<b>THE EFFECT OF VIBRATION ON THE POSSIBILITY OF A THREAT TO THE HEALTH OF WORKERS ON SCAFFOLDING.....</b>	1587
<i>Grośel Jacek, Sawicki Marek, Sawicki Wojciech, Szóstak Mariusz, Wójcicki Zbigniew</i>	
<b>THE INFLUENCE OF <math>Li_2CO_3</math> ON THE KINETICS OF THE CONCRETE HARDENING AT THE TEMPERATURE OF 80° C.....</b>	1593
<i>Adamtsevich Aleksey, Blinov Ivan, Shilova Liubov, Pustovgar Andrey, Shokodko Ekaterina</i>	
<b>MECHANISM OF GYPSUM HARDENING .....</b>	1601
<i>Petropavlovskaya Victoria, Novichenkova Tatiana, Pustovgar Andrey, Buryanov Aleksandr, Petropavlovskii Kirill</i>	
<b>Author Index</b>	