

Природна ранјивост карстних издани средњетријаских кречњака у области између река Бистрице, Увца и Лима

Branislav Petrović, Veljko Marinović, Zoran Stevanović



Дигитални репозиторијум Рударско-геолошког факултета Универзитета у Београду

[ДР РГФ]

Природна ранјивост карстних издани средњетријаских кречњака у области између река Бистрице, Увца и Лима | Branislav Petrović, Veljko Marinović, Zoran Stevanović | 18. Kongres geologa Srbije | 2022 | |

<http://dr.rgf.bg.ac.rs/s/repo/item/0006698>

Srpsko geološko društvo

**Zbornik apstrakata
XVIII Kongres geologa Srbije**



**18 КОНГРЕС
ГЕОЛОГА СРБИЈЕ**

**Book of abstracts
of the XVIII Serbian Geological Congress**

**GEOLOGIJA REŠAVA PROBLEME
GEOLOGY SOLVES THE PROBLEMS**

Divčibare, 01-04. jun 2022.

XVIII Kongres geologa Srbije: Zbornik apstrakata

(Nacionalni kongres sa međunarodnim učešćem)

XVIII Serbian Geological Congress: Book of abstracts

(National Congress with International Participation)

Divčibare, 01-04.06.2022.

Organizator / Organised by

Srpsko geološko društvo / Serbian Geological Society

Suorganizator / Co-organised by

Univerzitet u Beogradu – Rudarsko-geološki fakultet /
University of Belgrade, Faculty of Mining and Geology

Za izdavača / For the Publisher

Vladimir Simić

Predsednik Srpskog geološkog društva / President of the Serbian Geological Society

Glavni urednik / Editor-in-chief

Bojan Kostić

Uređivački odbor / Editorial Board

Danica Srećković-Batočanin, Nevenka Đerić, Dragoljub Bajić

Tehnička priprema / Technical Preparation

Bojan Kostić, Zoran Miladinović, Ana Zeković, Marija Petrović

Izdavač / Publisher

Srpsko geološko društvo / Serbian Geological Society

Kamenička 6, P.Box 227, 11001, Belgrade, Serbia

<http://www.sgd.rs>; e-mail: office@sgd.rs

ISBN-978-86-86053-23-7

Napomena: *Autori su odgovorni za sadržaj i kvalitet svojih saopštenja*

Note: *The authors are responsible for the content and quality of their contributions*

Organizacioni odbor / Organizing Committee

Vladimir Simić (predsednik), Danica Srećković-Batočanin (potpredsednik), Dragoljub Bajić (sekretar), Zoran Miladinović (sekretar), Nevenka Đerić, Nenad Marić, Predrag Cvijić, Danijela Božić, Sonja Đokanović, Bojan Kostić, Nikoleta Aleksić, Stefan Petrović, Nemanja Krstekanić, Maja Maleš, Marija Vuletić, Natalija Batočanin

Naučni odbor / Scientific Committee

Vladimir Simić, Danica Srećković Batočanin, Nevenka Đerić, Dragana Životić, Rade Jelenković, Aleksandar Kostić, Uroš Đurić, Miloš Marjanović, Alena Zdravković, Suzana Erić, Meri Ganić, Uroš Stojadinović, Katarina Bogičević, Dejan Prelević, Jana Štrbački, Vesna Ristić-Vakanjac, Dušan Polomčić, Vesna Cvetkov, Nevena Andrić-Tomašević, Spomenko Mihajlović, Aleksandra Maran-Stevanović, Darko Spahić, Slobodan Radusinović, Lidija Galović, Kristina Šarić, Vesna Matović

Volonteri studenti / Students volunteers

Marija Petrović, Filip Arnaut

Sponzori / Sponsors

Ministarstvo prosvete, nauke i tehnološkog razvoja
Univerzitet u Beogradu – Rudarsko-geološki fakultet
"Jelen Do" Lime & Aggregates - Carmeuse Group
Rudarski institut d.o.o. Beograd
IBIS-INŽENJERING d.o.o. Banja Luka
Geoing Group
GeoProspect d.o.o.
VODAVODA
Knjaz Miloš
Kompanija Simex

PLENARNA PREDAVANJA / PLENARY LECTURES

Zoran Stevanović, Podzemne vode – ključni resurs budućnosti i najbolji indikator stanja životne sredine.

Zoran Stevanović, Groundwater – Key Resource for the Future and Best Indicator of Environmental Status

Oleg Mandić, Stratigrafija i paleogeografija neogena južnog Panonskog bazena.

Oleg Mandić, Neogene stratigraphy and paleogeography of the southern Pannonian basin.

Ivan Dulić, M. Dunčić, G. Bogićević, V. Gajić, S. Teslić, P. Cvijić, J. Sovilj, S. Marjanović, R. Ahmetzjanov, Regionalni naftno-geološki projekti na prostoru Panonskog basena, Dinarida i Karpatobalkanida.

Ivan Dulić, M. Dunčić, G. Bogićević, V. Gajić, S. Teslić, P. Cvijić, J. Sovilj, S. Marjanović, R. Ahmetzjanov, Regional oil and geological projects in the Pannonian Basin, Dinarides and Carpathian Balkan.

PREDAVANJA PO POZIVU / INVITED LECTURES

Nevena Andrić-Tomašević, Dinamika litosfere duž severoistočnog oboda Adrije zabeležena u sedimentnim basenima i magmatskim produktima

Nevena Andrić-Tomašević, Quantifying lithospheric dynamics along the north-eastern margin of Adria using magmatic and sedimentary signals

Dragoljub Bajić, Rešavanje problema odvodnjavanja primenom „fuzzy MCDM“ metoda pri inženjersko-geološkim istraživanjima

Dragoljub Bajić, Solving dewatering problems using fuzzy MCDM Methods for Engineering-geological Surveys

Katarina Brađić Milinović, Otoliti *in situ* sa teritorije Srbije (stratigrafski, paleoekološki i paleogeografski značaj)

Katarina Brađić Milinović, Otoliths *in situ* from Serbia (stratigraphic, paleoecological and paleogeographical significance)

Miloš Velojić, Geologija hidrotermalnog Cu-Au sistema Čukaru Peki

Miloš Velojić, Geology of the Čukaru Peki hydrothermal *Cu-Au* system

Violeta Gajić, Sedimentologija gornje krede jednog dela Unutrašnjih Dinarida (zapadna Srbija)

Violeta Gajić, Sedimentology of the Upper Cretaceous within a part of the Internal Dinarides (West Serbia)

Dragana Đurić, Primena SAR interferometrije za određivanje koseizmičkih deformacija: trendovi i dostignuća

Dragana Đurić, SAR interferometry for coseismic displacement determination: trends and achievements

Miloš Marjanović, Analiza odrona u stenskim kosinama: savremeni pristupi

Miloš Marjanović, Rockfalls analysis in rock slopes: state-of-the-art approaches

Aleksandar Pačevski, Nov pristup proučavanju tekstura minerala značajnih za istraživanje rudnih ležišta

Aleksandar Pačevski, New approaches to the study of mineral textures significant for ore deposits exploration

Dejan Radivojević, Evolucija jugoistočnog dela Panonskog basena i njene implikacije

Dejan Radivojević, Evolution of Southeastern part of the Pannonian Basin and its implications

Ranka Stanković, Harmonizacija geopodataka korišćenjem povezanih otvorenih podataka

Ranka Stanković, Harmonization of Geodata Using Linked Open Data

SADRŽAJ / CONTENT

KORELACIJA MAGNETNOG SUSCEPTIBILITETA I SADRŽAJA METALA U FLOTACIJSKOM JALLOVIŠTU Filip Abramović, Vesna Cvetkov, Aco Ilić, Dragana Životić	23
CORRELATION OF MAGNETIC SUSCEPTIBILITY AND CONTENT OF METAL IN FLOTATION TAILINGS Filip Abramović, Vesna Cvetkov, Aco Ilić, Dragana Životić	24
GEOLOŠKE KARAKTERISTIKE LEŽIŠTA ARHITEKTONSKO-GRAĐEVINSKOG (UKRASNOG) KAMENA "VINIĆI"-BJELOPAVLICI Vasilije Abramović, Darko Božović	25
GEOLOGICAL CHARACTERISTICS OF DIMENSION STONE FROM THE "VINIĆI" DEPOSIT - BJELOPAVLICI Vasilije Abramović, Darko Božović	26
NAFTNO-MATIČNE STENE I NJIHOVA ZRELOST U PODRUČJU BAŠAIDA (PANONSKI BASEN) Nikoleta Aleksić, Aleksandar Kostić	27
PETROLUM SOURCE ROCKS AND THEIR MATURITY IN THE AREA OF BAŠAID (PANNONIAN BASIN) Nikoleta Aleksić, Aleksandar Kostić	28
FORMACIONA ANALIZA GORNJOMIOCENSKO-DONJOPLIOCENSKIH SEDIMENATA PODRUČJA JUGOISTOČNOG BANATA Filip Anđelković, Dejan Radivojević	29
FORMATIONAL ANALYSIS OF UPPER MIOCENE-LOWER PLIOCENE SEDIMENT IN THE SOUTHEASTERN BANAT AREA Filip Anđelković, Dejan Radivojević	30
KASNA FAZA EVOLUCIJE DINARIDA ZABELEŽENA U SEDIMENTNIM BASENIMA I MAGMATSKIM PRODUKTIMA Nevena Andrić -Tomašević	31
LATE-STAGE EVOLUTION OF THE DINARIDES RECORDED IN SEDIMENTARY BASINS AND MAGMATIC PRODUCTS Nevena Andrić -Tomašević	32
PRIMENA JEDNOSTAVNIH METODA PREDVIĐANJA NA PODATKE VERTIKALNOG ELEKTROMETRIJSKOG SONDIRANJA Filip Arnaut, Vesna Cvetkov, Dragana Đurić	33
APPLICATION OF SIMPLE FORECASTING METHODS ON VERTICAL ELECTRICAL SOUNDING DATA Filip Arnaut, Vesna Cvetkov, Dragana Đurić	34
PROJEKAT RAZVOJA MODULARNOG ROBOTSKOG SISTEMA ZA RUDARENJE (ROBOMINERS) I PERSPEKTIVA PRIMENE U SRBIJI Nebojša Atanacković, Vladimir Živanović, Veselin Dragišić, Sava Magazinović, Predrag Mijatović	35
PROJECT OF DEVELOPMENT OF MODULAR ROBOTIC MINING SYSTEM (ROBOMINERS) AND PERSPECTIVE OF APPLICATION IN SERBIA Nebojša Atanacković, Vladimir Živanović, Veselin Dragišić, Sava Magazinović, Predrag Mijatović	36

HIDROGEOLOGIJA LEŽIŠTA BAKRA I ZLATA ČUKARU PEKI – OD ISTRAŽIVANJA DO EKSPLOATACIJE

Nebojša Atanacković, Vladimir Živanović, Veselin Dragišić, Jelena Davidović.....37

HYDROGEOLOGY OF THE ČUKARU PEKI COPPER-GOLD DEPOSIT – FROM EXPLORATION TO EXPLOITATION

Nebojša Atanacković, Vladimir Živanović, Veselin Dragišić, Jelena Davidović.....38

NOV PRISTUP POSREDNOG DEFINISANJA MODULA DEFORMACIJA

Predrag Babić, Uroš Mirković, Slobodan Radovanović39

MATEMATIKA KAO ALAT ZA REŠAVANJE PROBLEMA PRI EKSPLOATACIJI LEŽIŠTA MINERALNIH SIROVINA

Sanja Bajić, Dragoljub Bajić, Branko Gluščević40

MATHEMATICS AS A TOOL FOR SOLVING PROBLEMS IN THE EXPLOITATION OF MINERAL DEPOSITS

Sanja Bajić, Dragoljub Bajić, Branko Gluščević41

REŠAVANJE PROBLEMA ODVODNJAVANJA PRIMENOM „FUZZY-MCDM“ METODA PRI INŽENJERSKO-GEOLOŠKIM ISTRAŽIVANJIMA

Dragoljub Bajić42

SOLVING DEWATERING PROBLEMS USING FUZZY MCDM METHODS FOR ENGINEERING-GEOLOGICAL SURVEYS

Dragoljub Bajić43

KINEMATSKA EVOLUCIJA MEZOZOJSKIH SEDIMENATA PLATO TARE I ZAOVINSKOG JEZERA (ZAPADNA SRBIJA)

Miljan Barjaktarović, Tatjana Vrtikapa, Marica Knežević44

KINEMATIC EVOLUTION OF MESOZOIC SEDIMENTS OF THE TARA PLATEAU AND LAKE ZAOVINE (WESTERN SERBIA)⁴⁵

Miljan Barjaktarović, Tatjana Vrtikapa, Marica Knežević45

O KONTINENTALNIM KARBONATIMA: BIGAR VS. TRAVERTIN

Natalija Batočanin, Ivana Carević, Sanja Manojlović.....46

ABOUT TERRESTRIAL CARBONATES: CALCAREOUS TUFA VS. TRAVERTINE

Natalija Batočanin, Ivana Carević, Sanja Manojlović.....47

HIDROGEOLOŠKE KARAKTERISTIKE TERMOMINERALNE VODE IZVORIŠTA „SEDRA“ KOD BREZE I MOGUĆNOST PRIMJENE

Sabit Begić, Ćazim Šarić, Miodrag Banješević & Marija Kukavica.....48

HYDROGEOLOGICAL CHARACTERISTICS OF THERMOMINERAL WATER OF THE SOURCE "SEDRA" AT BREZA AND POSSIBILITY OF UTILISATION

Sabit Begić, Ćazim Šarić, Miodrag Banješević & Marija Kukavica.....49

EVALUATION OF THE GEOLOGICAL CONTEXT FOR NUCLEAR WASTE DISPOSAL OPTIONS IN SERBIA

Koen Beerten, Koen Lenie, Petar Stejić, Dalibor Arbutina.....50

THERMAL AND SUBTHERMAL KARST WATER IN BULGARIA

Aleksey Benderev, Sava Kolev, Mila Trayanova, Aglaida Toteva.....51

LATE MIOCEN VOLCANISM IN THE TIKVES VALLEY-NORTH MACEDONIA (MRZEN LOCALITY)

Ivan Boev52

18. Kongres geologa Srbije "Geologija rešava probleme", Divčibare, 01-04 jun 2022. 18 th Serbian Geological Congress "Geology solves the problems", Divčibare, June 01 st -04 th 2022.	Zbornik apstrakata Book of abstracts
--	---

**MINERALOGICAL BACKGROUND OF ALINCI LOCALITY,
NORTH MACEDONIA**

Ivan Boev, Marko Bermanec.....53

**STRATIGRAFSKA POZICIJA I VULKANOLOŠKE KARAKTERISTIKE ANDEZITA LEŽIŠTA
ČUKARU PEKI**

Dragana Bosić, Vladica Cvetković, Miodrag Banješević, Siyuan Chen, Aleksandar Pačevski,
Kristina Šarić.....54

**STRATIGRAPHY AND VOLCANOLOGICAL CHARACTERISTICS OF THE HOST
ANDESITE OF THE ČUKARU PEKI DEPOSIT**

Dragana Bosić, Vladica Cvetković, Miodrag Banješević, Siyuan Chen, Aleksandar Pačevski,
Kristina Šarić.....55

**GEOTEHNIČKI USLOVI NA UNUTRAŠNJEM ODLAGALIŠTU POVRŠINSKOG KOPA
DRMNO I PREDLOZI ZA STABILIZACIJU TERENA**

Danijela Božić.....56

**GEOTECHNICAL CONDITIONS AT THE INTERNAL LANDFILL OF DRMNO OPEN PIT
AND PROPOSALS FOR FIELD STABILIZATION**

Danijela Božić.....57

**STANJE I POTENCIJALNOST TEHNIČKO – GRAĐEVINSKOG KAMENA
JADRANSKO-JONSKE ZONE CRNE GORE**

Darko Božović, Dragan Radulović, Vladimir Simić.....58

**STATE AND POTENTIALITY OF AGGREGATE ROCKS OF THE ADRIATIC-IONIAN
ZONE OF MONTENEGRO**

Darko Božović, Dragan Radulović, Vladimir Simić.....59

**OTOLITI *IN SITU* SA TERITORIJE SRBIJE (STRATIGRAFSKI, PALEOEKOLOŠKI I
PALEOGEOGRAFSKI ZNAČAJ)**

Katarina Bradić-Milinović, Werner Schwarzhans60

**OTOLITHS *IN SITU* FROM SERBIA (STRATIGRAPHIC, PALEOECOLOGICAL AND
PALAEOGEOGRAPHICAL SIGNIFICANCE)**

Katarina Bradić-Milinović, Werner Schwarzhans61

THE AGE AND COMPOSITION OF UPPER CRETACEOUS MAMONIA MÉLANGE, CYPRUS

Nikita Bragin, Liubov Bragina, Efthymios Tsiolakis, Vasilis Symeou.....62

**UPPER CRETACEOUS (CONIACIAN) METALLIFEROUS DEPOSITS OF THE PERAPEDHI
FORMATION IN THE AKAMAS PENINSULA, CYPRUS**

Liubov Bragina, Nikita Bragin, Efthymios Tsiolakis, Vasilis Symeou, Nikolaos Papadimitriou,
Polina Proshina.....63

**VULKANITI KARADORĐEVO FORMACIJE: NOVI PODACI IZ BUŠOTINA U
SREDNJEM BANATU**

Vladica Cvetković, Milena Dunčić, Ivan Dulić, Predrag Cvijić, Dejan Prelević, Kristina Šarić.....64

**VOLCANIC ROCKS OF THE KARADORĐEVO FORMATION: NEW DATA FROM
DRILLHOLES IN MIDDLE BANAT**

Vladica Cvetković, Milena Dunčić, Ivan Dulić, Predrag Cvijić, Dejan Prelević, Kristina Šarić.....65

PERMSKI VULKANITI SEVERNE BAČKE

Vladica Cvetković, Kristina Šarić, Predrag Cvijić, Milena Dunčić, Dejan Prelević.....66

PERMIAN VOLCANIC ROCKS OF NORTHERN BAČKA

Vladica Cvetković, Kristina Šarić, Predrag Cvijić, Milena Dunčić, Dejan Prelević.....67

18. Kongres geologa Srbije "Geologija rešava probleme", Divčibare, 01-04 jun 2022. 18 th Serbian Geological Congress "Geology solves the problems", Divčibare, June 01 st -04 th 2022.	Zbornik apstrakata Book of abstracts
--	---

**LEŽIŠTE ARHITEKTONSKO-GRAĐEVINSKOG (UKRASNOG) KAMENA
"TOSPUDE" – CUCE**

Ivan Danilović, Darko Božović.....68

THE DIMENSION STONE DEPOSIT "TOSPUDE" – CUCE

Ivan Danilović, Darko Božović.....69

**GORNJOTRIJASKE ASOCIJACIJE RADIOLARIJA CENTRALNE SRBIJE (OKOLINA
KRAGUJEVCA)**

Nevenka Đerić, Hans-Jürgen Gawlick, Špela Goričan, Bojana Džinić.....70

**LATE TRIASSIC RADIOLARIAN ASSEMBLAGES FROM CENTRAL SERBIA
(KRAGUJEVAC AREA)**

Nevenka Đerić, Hans-Jürgen Gawlick, Špela Goričan, Bojana Džinić.....71

MINERALNO-SIROVINSKI POTENCIJAL LOPARSKOG BASENA

Evica Divković-Golić, Ljubomir Gajić, Dražan Tokanović.....72

MINERAL RAW POTENTIAL OF LOPARE BASIN

Evica Divković-Golić, Ljubomir Gajić, Dražan Tokanović.....73

TREKUTNO STANJE U IZRADI OSNOVNE INŽENJERSKOGEOLOŠKE KARTE SRBIJE

Sonja Đokanović, Đorđe Trbojević, Jasmina Mićević.....74

**CURRENT SITUATION IN THE PREPARATION OF THE BASIC ENGINEERING
GEOLOGICAL MAP OF SERBIA**

Sonja Đokanović, Đorđe Trbojević, Jasmina Mićević.....75

**POTENCIJALNO TOKSIČNI ELEMENTI U OVERBANK SEDIMENTIMA MIKRO BASENA
IZ SEVERNOG DELA TOKA ZAPADNE MORAVE (SRBIJA)**

Božidar V. Đokić, Dragana Vidojević.....76

**POTENTIALLY TOXIC ELEMENTS IN OVERBANK SEDIMENTS OF MICRO BASIN FROM
THE NORTHERN PART OF THE WESTERN MORAVA RIVER (SERBIA)**

Božidar V. Đokić, Dragana Vidojević.....77

**REGIONALNI NAFTNO-GEOLOŠKI PROJEKTI NA PROSTORU PANONSKOG BASENA,
DINARIDA I KARPATO-BALKANIDA**

Ivan Dulić, M. Dunčić, G. Bogičević, V. Gajić, S. Teslić, P. Cvijić, J. Sovilj, S. Marjanović i
R. Ahmetzjanov.....79

**PRIMENA SAR INTERFEROMETRIJE ZA ODREĐIVANJE KOSEIZMIČKIH DEFORMACIJA:
TRENDOVI I DOSTIGNUĆA**

Dragana Đurić.....80

**SAR INTERFEROMETRY FOR COSEISMIC DISPLACEMENT DETERMINATION: TRENDS
AND ACHIEVEMENTS**

Dragana Đurić.....81

GEOFIZIČKA ISTRAŽIVANJA TONJENJA LESA U ZEMUNU

Dragana Đurić, Branislav Sretković, Uroš Đurić, Zoran Radić, Dejan Vučković.....82

GEOLOGICAL INVESTIGATION OF COLLAPSING LOESS IN ZEMUN

Dragana Đurić, Branislav Sretković, Uroš Đurić, Zoran Radić, Dejan Vučković.....83

**PRVI NALAZ FOSILNE RIBE (ENCHODONTOIDEI, ACTINOPTERYGII) U
KAMENOLOMU STRUGANIKA**

Dragana D. Đurić, Nevenka Đerić, Katarina Bradić-Milinović, Ivana Petrović.....84

18. Kongres geologa Srbije "Geologija rešava probleme", Divčibare, 01-04 jun 2022. 18 th Serbian Geological Congress "Geology solves the problems", Divcibare, June 01 st -04 th 2022.	Zbornik apstrakata Book of abstracts
--	---

FIRST RECORD OF FOSSIL FISH (ENCHODONTOIDEI, ACTINOPTERYGII) IN THE STRUGANIK QUARRY

Dragana D. Đurić, Nevenka Đerić, Katarina Bradić-Milinović, Ivana Petrović.....85

FOSSILNI NALAZI BEZNOGIH GUŠTERA (ANGUINAE, SQUAMATA) U PLEISTOCENSKIM LOKALITETIMA SRBIJE

Dragana Đurić, Katarina Bogičević, Draženko Nenadić, Mihailo Jovanović, Aleksandra Savković....86

FOSSIL FINDINGS OF LEGLESS LIZARDS (ANGUINAE, SQUAMATA) IN PLEISTOCENE SITES OF SERBIA

Dragana Đurić, Katarina Bogičević, Draženko Nenadić, Mihailo Jovanović, Aleksandra Savković...87

PRIMENA STRUCTURE FROM MOTION TEHNIKE ZA INŽENJERSKOGEOLOŠKO KARTIRANJE PODZEMNIH PROSTORIJA

Uroš Đurić, Nenad Brodić, Zoran Radić, Dragana Đurić, Miloš Marjanović.....88

APPLICATION OF STRUCTURE FROM MOTION TECHNIQUE FOR ENGINEERING GEOLOGICAL MAPPING OF UNDERGROUND ROOMS

Uroš Đurić, Nenad Brodić, Zoran Radić, Dragana Đurić, Miloš Marjanović.....89

GEOLOSKI VODIČ PLANINARSKJE TRANSVERZALE VRANICA-POGORELICA-BITOVNJA

Alojz Filipović, Ivona Filipović90

A GUIDE TO THE GEOLOGY OF VRANICA-POGORELICA-BITOVNJA MOUNTAIN PATHWAY

Alojz Filipović, Ivona Filipović91

SEDIMENTOLOGIJA GORNJE KREDE JEDNOG DELA UNUTRAŠNJIH DINARIDA (ZAPADNA SRBIJA)

Violeta Gajić92

SEDIMENTOLOGY OF THE UPPER CRETACEOUS WITHIN A PART OF THE INTERNAL DINARIDES (WESTERN SERBIA)

Violeta Gajić93

ĐURĐEVAČKI PIJESCI: PRVI REZULTATI DATIRANJA I PRELIMINARNA PALEOGEOGRAFSKA REKONSTRUKCIJA

Lidija Galović, Koen Beerten, Mihajlo Pandurov, Rodoljub Gajić, Petar Stejić, Nina Hećej, Ajka Šorša, Rosa Maria Poch, Stjepan Husnjak94

THE ĐURĐEVAC SANDS: FIRST DATING RESULTS AND PRELIMINARY PALEOGEOGRAPHICAL RECONSTRUCTION

Lidija Galović, Koen Beerten, Mihajlo Pandurov, Rodoljub Gajić, Petar Stejić, Nina Hećej, Ajka Šorša, Rosa Maria Poch, Stjepan Husnjak95

GEODIVERZITET NEGOTINSKE KRAJINE (ISTOČNA SRBIJA): PERSPEKTIVA ZAŠTITE "BUKOVSKJE DELTE"

Meri Ganić, Dejan Radivojević.....96

GEO-DIVERSITY OF NEGOTIN KRAJINA (EASTERN SERBIA): PROTECTION PERSPECTIVE OF „BUKOVO DELTA“

Meri Ganić, Dejan Radivojević.....97

PALEOGEOGRAFIJA PALIĆKOG I LUDOŠKOG JEZERA

Tivadar Gaudenyi, Milan Mihajlović98

PALEOGEOGRAPHY OF THE LAKE PALIĆ AND LAKE LUDOŠ

Tivadar Gaudenyi, Milan Mihajlović99

18. Kongres geologa Srbije "Geologija rešava probleme", Divčibare, 01-04 jun 2022. 18 th Serbian Geological Congress "Geology solves the problems", Divčibare, June 01 st -04 th 2022.	Zbornik apstrakata Book of abstracts
--	---

DEPOZICIONA ISTORIJA TRIJASKE SPOLJAŠNJE-PREDŠELFNE SEKVENCE HALŠTATSKOG KREČNJAKA SAČUVANE U UNUTRAŠNJIM DINARIDIMA SRBIJE Hans-Jürgen Gawlick, Milan N. Sudar	100
DEPOSITIONAL HISTORY OF THE TRIASSIC OUTER SHELF HALLSTATT LIMESTONE SEQUENCE PRESERVED IN THE INNER DINARIDES OF SERBIA Hans-Jürgen Gawlick, Milan Sudar	101
LITOSTRATIGRAFSKE KARAKTERISTIKE PLAVINSKIH DEONATA ČUKOVA (SEVEROZAPADNA SRBIJA) Bojan Glavaš-Trbić, Slavica Đajić, Monika Mirković, Petar Stejić	102
LITOSTRATIGRAPHIC CHARACTERISTICS OF ČUKOVO PROLUVIAL DEPOSITS (NORTHWESTERN SERBIA) Bojan Glavaš-Trbić, Slavica Đajić, Monika Mirković, Petar Stejić	103
GEOLOŠKI STUB ZA SREDNJOBOSANSKO ŠKRILJAVO GORJE (SŠG) Hazim Hrvatović	104
GEOLOGICAL COLUMN FOR THE MID-BOSNIAN SCHIST MTS. (MBSM) Hazim Hrvatović	105
DEFINISANJE STRUKTURNO-TEKTONSKIH ODNOSA KOJI SU UTICALI NA FORMIRANJE NEOGENIH BASENA PRIMENOM MATEMATIČKIH TRANSFORMACIJA Snežana Ignjatović, Ivana Vasiljević, Dejan Vučković	107
APPLICATION OF MATHEMATICAL TRANSFORMATION TO DEFINE STRUCTURAL-TECTONIC CORRELATION AFFECTING THE FORMATION OF NEOGENE BASINS Snežana Ignjatović, Ivana Vasiljević, Dejan Vučković	108
NAFTNI POTENCIJAL LITOSTRATIGRAFSKIH JEDINICA NA PROSTORU OBUDOVAC-BRVNIK Saša Ivanišević, Petar Skrobbonja, Irina Zahirović, Mikhail Kuznetsov, Dejan Radivojević	109
OIL POTENTIAL OF LITHOSTRATIGRAPHIC UNITS IN THE OBUDOVAC-BRVNIK AREA Saša Ivanišević, Petar Skrobbonja, Irina Zahirović, Mikhail Kuznetsov, Dejan Radivojević	110
RANJIVOSTI PODZEMNIH VODA SJEVEROZAPADNOG DIJELA REPUBLIKE SRPSKE I PRIMJENA CLC BAZE PODATAKA Dunja Josipović, Petar Begović, Branko Ivanković, Nataša Bajić.....	111
GROUNDWATER VULNERABILITY OF THE NORTHWESTERN PART OF REPUBLIC OF SRPSKA AND CLC DATABASE APPLICATION Dunja Josipović, Petar Begović, Branko Ivanković, Nataša Bajić.....	112
GEOLOŠKE KARAKTERISTIKE ARHITEKTONSKO-GRAĐEVINSKOG (UKRASNOG) KAMENA LEŽIŠTA "BRANKOV KRŠ" – CETINJE Božica Jovanović, Mia Jovanović, Darko Božović.....	113
GEOLOGICAL CHARACTERISTICS OF ARCHITECTURAL-BUILDING (ORNAMENTAL) STONE DEPOSIT "BRANKOV KRŠ" – CETINJE Božica Jovanović, Mia Jovanović, Darko Božović.....	114
BIJELI BOKSITI ZAPADNE CRNE GORE KAO NEMETALIČNA MINERALNA SIROVINA Mia Jovanović, Slobodan Radusinović	115
WHITE BAUXITES OF WESTERN MONTENEGRO AS A NON-METALIC MINERAL RESOURCE Mia Jovanović, Slobodan Radusinović	116

18. Kongres geologa Srbije "Geologija rešava probleme", Divčibare, 01-04 jun 2022. 18 th Serbian Geological Congress "Geology solves the problems", Divcibare, June 01 st -04 th 2022.	Zbornik apstrakata Book of abstracts
--	---

NAUČNA I EDUKATIVNA VREDNOST LESNIH PROFILA OD STAROG SLANKAMENA DO ZEMUNA

Mladen Jovanović, Tivadar Gaudenyi, Ljupko Rundić.....117

SCIENTIFIC AND EDUCATIONAL VALUES OF LOESS SECTIONS FROM STARI SLANKAMENT TO ZEMUN

Mladen Jovanović, Tivadar Gaudenyi, Ljupko Rundić.....118

BARREMIAN - APTIAN OSTRACODA AND PLANKTONIC FORAMINIFERA OF THE KOKLUK SECTION (E CRIMEA)

Maria Karpuk119

GUTLOVO VRELO U DOLINI VELIKOG RZAVA

Milorad Kličković120

GUTLOVO VRELO KARST SPRING IN THE VELIKI RZAV RIVER VALLEY

Milorad Kličković121

FOSILI SLOVENIJE

Tea Kolar-Jurkovšek, Bogdan Jurkovšek.....122

FOSSILS OF SLOVENIA

Tea Kolar-Jurkovšek, Bogdan Jurkovšek.....123

KONODONTI SLOVENIJE

Tea Kolar-Jurkovšek, Bogdan Jurkovšek.....124

CONODONTS OF SLOVENIA

Tea Kolar-Jurkovšek, Bogdan Jurkovšek.....125

MODEL BASED ASSESSMENT OF URANIUM MIGRATION, DOWNSTREAM OF "ELESHNITSA" TAILINGS POND, BULGARIA

Sava Kolev, Peter Gerginov126

ELEMENTI U TRAGOVIMA I FLUIDNE INKLUZIJE DISTALNIH SKARNOVA RUDNIKA

Bojan Kostić, Danica Srečković-Batočanin & Vesna Matović.....127

TRACE ELEMENTS AND FLUID INCLUSIONS IN DISTAL SKARN ZONE FROM RUDNIK

Bojan Kostić, Danica Srečković-Batočanin & Vesna Matović.....128

KOMPARACIJA METODA XRF I ICP-MS NA UZORCIMA UGLJA I PRODUKATA SAGOREVANJA

Branko Kostić, Dejan Prelević, Sabina Kovač, Ksenija Eraković, Dragana Životić129

COMPARISON OF XRF AND ICP-MS METHODS ON COAL SAMPLES AND COMBUSTION PRODUCTS

Branko Kostić, Dejan Prelević, Sabina Kovač, Ksenija Eraković, Dragana Životić130

INTRODUCTION TO THE IGCP 710 PROJECT: WESTERN TETHYS MEETS EASTERN TETHYS

Michał Krobicki with co-leaders and members of the IGCP 710 Project131

PEPERITES ON THE PIETROS MOUNT (WESTERN CHORNOHORA, UKRAINIAN CARPATHIAN MOUNTAINS)

Michał Krobicki132

ANALOGNO MODELOVANJE TRANSFERA DEFORMACIJA OKO KRUTIH INDENTERA

Nemanja Krstekanić, Ernst Willingshofer, Liviu Matenco, Marinko Toljić, Uroš Stojadinović.....133

ANALOGUE MODELLING OF DEFORMATION TRANSFER AROUND RIGID INDENTERS

Nemanja Krstekanić, Ernst Willingshofer, Liviu Matenco, Marinko Toljić, Uroš Stojadinović.....134

18. Kongres geologa Srbije "Geologija rešava probleme", Divčibare, 01-04 jun 2022. 18 th Serbian Geological Congress "Geology solves the problems", Divčibare, June 01 st -04 th 2022.	Zbornik apstrakata Book of abstracts
--	---

CIRKUM-MEZIJSKI RASEDNI SISTEM: STRUKTURA, KINEMATIKA I OROKLINO POVIJANJE KARPATO-BALKANIDA Nemanja Krstekanić, Liviu Matenco, Ernst Willingshofer, Marinko Toljić, Uroš Stojadinović.....	135
THE CIRCUM-MOESIAN FAULT SYSTEM: STRUCTURE, KINEMATICS AND OROCLINAL BENDING OF THE CARPATHO-BALKANIDES Nemanja Krstekanić, Liviu Matenco, Ernst Willingshofer, Marinko Toljić, Uroš Stojadinović.....	136
POSTUPCI ISTRAŽIVANJA I OSMATRANJA TECIŠTA Jelka Krušić, Biljana Abolmasov, Miloš Marjanović	137
METHODOLOGY IN MONITORING AND REASEARCH OF DEBRIS FLOWS Jelka Krušić, Biljana Abolmasov Miloš Marjanović	138
NASLAGE KROVINSKOG KVARCNOG PESKA IZ JUŽNOG DELA LEŽIŠTA „TAMNAVA ISTOČNO POLJE“ KAO POTENCIJALNA SIROVINA U PROCESU OTKOPAVANJA LIGNITA Slobodan Lalatović.....	139
ROOF QUARTZ SAND LAYER FROM THE SOUTHERN PART OF THE “TAMNAVA EAST FIELD” DEPOSIT AS A POTENTIAL RAW MATERIAL IN THE LIGNITE EXPLOITATION PROCESS Slobodan Lalatović.....	140
UPOREDNA STATISTIČKA ANALIZA PARAMETARA KVALITETA UGLJA ZA PERIOD OD 2008. DO 2021. GODINE, KAO PODRŠKA U PROCESU HOMOGENIZACIJE, LEŽIŠTE UGLJA „POLJE G“, KOLUBARSKI UGLJONOSNI BASEN, SRBIJA Slobodan Lalatović.....	141
CONTINUOUS STATISTICAL ANALYSIS OF COAL QUALITY PARAMETERS FOR THE PERIOD 2008 TO 202, AS SUPPORT IN THE HOMOGENIZATION PROCESS, COAL DEPOSIT “POLJE G”, KOLUBAR COAL BASIN, SERBIA Slobodan Lalatović.....	142
REKONSTRUKCIJA PALEOVEGETACIJE MLAĐEG MIOCENA SRBIJE Zorica Lazarević, Jelena Milivojević	143
RECONSTRUCTION OF THE EARLY MIOCENE PALEOVEGETATION OF SERBIA Zorica Lazarević, Jelena Milivojević	144
METODOLOŠKI PRISTUPI ISPITIVANJU BOKSITA I CRVENIH MULJEVA Jovana Malbašić, Sava Marković, Marina Lazarov, Aleksandar Pačevski, Slobodan Radusinović, Jovana Orlić, Dejan Prelević	145
RESEARCH OF BAUXITES AND RED MUD: METHODOLOGICAL APPROACHES Jovana Malbašić, Sava Marković, Marina Lazarov, Aleksandar Pačevski, Slobodan Radusinović, Jovana Orlić, Dejan Prelević	146
TEKTONSKE I PETROLOŠKE KARAKTERISTIKE SEVERNE SRPSKO-MAKEDONSKE SUBJEDINICE Maja Maleš, Uroš Stojadinović, Nemanja Krstekanić, Bojan Kostić	147
TECTONIC AND PETROLOGICAL FEATURES OF THE NORTHERNSERBO-MACEDONIAN SUBUNIT Maja Maleš, Uroš Stojadinović, Nemanja Krstekanić, Bojan Kostić	148
STRATIGRAFIJA I PALEOGEOGRAFIJA NEOGENA JUŽNOG PANONSKOG BAZENA Oleg Mandić.....	149

NEOGENE STRATIGRAPHY AND PALEO GEOGRAPHY OF THE SOUTHERN PANNONIAN BASIN

Oleg Mandić150

ĐERDAP UNESKO GLOBALNI GEOPARK – U SLICI I REČI

Aleksandra Maran Stevanović.....151

DJERDAP UNESCO GLOBAL GEOPARK - IN PICTURES AND WORDS

Aleksandra Maran Stevanović.....152

GEODIVERZITET SRBIJE – ZAŠTO ŠTITITI I ZA KOGA ČUVATI?

Aleksandra Maran Stevanović.....153

GEODIVERSITY OF SERBIA - WHY TO CONSERVE AND FOR WHOM TO PRESERVE?

Aleksandra Maran Stevanović.....154

INOVATIVNE TEHNOLOGIJE ZA PROSTORNU KARAKTERIZACIJU NAFTNOG ZAGAĐENJA - FLUORESCENCIJA INDUKOVANA LASERSKI ZRACENJEM (LIF)

Aleksandar Prvanović, Nenad Marić, Zoran Nikić155

PETROLEUM HYDROCARBONS CONTAMINATION - LASER-INDUCED FLUORESCENCE (LIF)

Aleksandar Prvanović, Nenad Marić, Zoran Nikić156

ODREĐIVANJE ZBIJENOSTI NASIPA ZA ODBRANU OD POPLAVA PRIMENOM DCP OPITA

Dragan Marjanović, Branko Ivanković157

DETERMINATION OF FLOOD EMBANKMENT COMPACTION USING DCP TEST

Dragan Marjanović, Branko Ivanković158

ANALIZA ODRONA U STENSKIM KOSINAMA: SAVREMENI PRISTUPI

Miloš Marjanović159

ROCKFALLS ANALYSIS IN ROCK SLOPES: STATE-OF-THE-ART APPROACHES

Miloš Marjanović161

COALS OF SLOVENIA

Miloš Markič163

GEOMAGNETSKA ISTRAŽIVANJA U ENERGETSKIM POLJIMA U SELU DRENAJICI U OKOLINI VALJEVA

Spomenko J. Mihajlović,.....165

GEOMAGNETIC INVESTIGATIONS IN ENERGY FIELDS IN THE VILLAGE DRENAJICI NEAR VALJEVO

Spomenko J. Mihajlović,.....166

GEOLOGICAL FACTORS FOR THE FORMATION OF THE CHEMICAL COMPOSITION OF GROUNDWATER IN THE CATCHMENT AREA OF THE MESTA RIVER

Boyka Mihailova, Simeon Valchev, Thomas Kerestedjian, Aleksey Benderev167

POJAVA JUVELIRSKOG KAMENA U ALUVIJALNOM NANOSU VELIKE KOSANICE (LECKI VULKANSKI KOMPLEKS)

Zoran Miladinović.....168

ALUVIAL PLACER GEMSTONE OCCURRENCE OF THE VELIKA KOSANICA RIVER (LECE VOLCANIC COMPLEX)

Zoran Miladinović.....169

18. Kongres geologa Srbije "Geologija rešava probleme", Divčibare, 01-04 jun 2022. 18 th Serbian Geological Congress "Geology solves the problems", Divčibare, June 01 st -04 th 2022.	Zbornik apstrakata Book of abstracts
--	---

PETROLOGIJA I MIKROPALAEONTOLOGIJA DONJE KREDE SKADARSKOG JEZERA (ZONA VISOKOG KRŠA, JUŽNA CRNA GORA)

Mileva Milić, Martin Đaković, Damjan Čađenović, Novo Radulović.....170

PETROLOGY AND MICROPALAEONTOLOGY OF LOWER CRETACEOUS LIMESTONES OF SKADAR LAKE (HIGH KARST ZONE, SOUTHERN MONTENEGRO)

Mileva Milić, Martin Đaković, Damjan Čađenović, Novo Radulović.....171

PALEOEKOLOŠKE KARAKTERISTIKE PALINOMORFI IZ TERCIJARNIH SEDIMENATA ŠAMAČKO-ORAŠKE DEPRESIJE

Jelena Milivojević, Ivana Zdravković, Zorica Lazarević172

PALEOECOLOGICAL CHARACTERISTICS OF PALINOMORPHS FROM TERTIARY SEDIMENTS OF THE ŠAMAČKO-ORAŠKA DEPRESSION

Jelena Milivojević, Ivana Zdravković, Zorica Lazarević173

MINERALOGIJA GLINA KOJE SE UPOTREBLJAVAJU ZA PROIZVODNJU GRNČARIJE U RUJIŠTU (RAŽANJ, SRBIJA)

Maja Milošević.....174

MINERALOGY OF CLAY USED FOR POTTERY MANUFACTURE IN RUJIŠTE (RAŽANJ, SERBIA)

Maja Milošević.....175

HIDROGEOLOŠKI POTENCIJAL GRADA DOBOJA U POGLEDU OTVARANJA NOVIH IZVORIŠTA PODZEMNIH VODA ZA VODOSNABDIJEVANJE STANOVNIŠTVA

Nikola Milovanović, Petar Begović176

HYDROGEOLOGICAL POTENTIAL OF THE CITY OF DOBOJ REGARDING THE OPENING NEW GROUNDWATER SOURCES FOR PUBLIC WATER SUPPLY

Nikola Milovanović, Petar Begović177

PRIKAZ PLEISTOCENSKE MALAKOFAUNE IZ CIGLANA JUGOZAPADNE BAČKE

Biljana Mitrović178

REVIEW OF THE PLEISTOCENE MALACOFUNA FROM THE BRICKYARDS OF SOUTHWESTERN BAČKA

Biljana Mitrović179

POKAZATELJI RECENTNE TEKTONSKE AKTIVNOSTI U SPELEOLOŠKIM OBJEKTIMA DŽEVRIJSKE GREDE (ISTOČNA SRBIJA)

Ana Mladenović, Jelena Čalić.....180

EVIDENCE OF RECENT TECTONIC ACTIVITY IN KARST CAVES OF THE NORTHERN PART OF THE DŽEVRIJSKA GREDA RIDGE (EASTERN SERBIA)

Ana Mladenović, Jelena Čalić.....181

MIDDLE-LATE ANISIAN STEPWISE DEEPENING AS RECORDED IN THE BULOG FORMATION IN THE SELJANI AREA, MONTENEGRO

Milica Mrdak, Martin Đaković, Nevenka Đerić, Hans-Jürgen Gawlick, Milan Sudar182

DA LI IMA TRAGOVA EKSPLOZIVNIH ERUPCIJA U ISTOČNOM DELU LECKOG VULKANSKOG KOMPLEKSA?

Emilija Nidžović, Vladica Cvetković, Kristina Šarić.....183

ARE THERE TRACES OF EXPLOSIVE ERUPTIONS IN THE EASTERN PART OF THE LECE VOLCANIC COMPLEX?

Emilija Nidžović, Vladica Cvetković, Kristina Šarić.....184

18. Kongres geologa Srbije "Geologija rešava probleme", Divčibare, 01-04 jun 2022. 18 th Serbian Geological Congress "Geology solves the problems", Divčibare, June 01 st -04 th 2022.	Zbornik apstrakata Book of abstracts
--	---

TEKTONOTERMALNA I EKSHUMACIONA ISTORIJA METAMORFNIH STENA ĐUNISKOGR VISA, CENTRALNOG DELA SRPSKO- MAKEDONSKE MASE, SRBIJA Nenad Nikolić, Dragan Milovanović, Timothy Chapman, Luke Milan.....	185
TECTONOTHERMAL AND EXHUMATION HISTORY OF ĐUNIS HIGHLAND OF THE CENTRAL PART OF THE LOWER METAMORPHIC CORE COMPLEX UNIT (SERBO-MACEDONIAN MASSIF, SERBIA) Nenad Nikolić, Dragan Milovanović, Timothy Chapman, Luke Milan.....	186
MACERALNI SASTAV I RANG UGLJA IBARSKOG BASENA Željana Novković, Nevena Andrić -Tomašević, Vladimir Simić, Dragana Životić	187
MACERAL COMPOSITION AND RANK OF COAL FROM THE IBAR BASIN Željana Novković, Nevena Andrić -Tomašević, Vladimir Simić, Dragana Životić	188
UPOREDNI PRIKAZ GEOLOŠKIH KARAKTERISTIKA LEŽIŠTA OPEKARSKE SIROVINE "SELIŠTE" I "LUČINA" KOD STALAČA, SA POSEBNIM OSVRTOM NA KVALITET I MOGUĆNOST PRIMENE U OPEKARSKOJ INDUSTRIJI Sreten Obradović, Vladimir Simić, Đorđe Simić, Milica Radovanović, Radomir Radunović	189
COMPARATIVE PRESENTATION OF GEOLOGICAL CHARACTERISTICS OF DEPOSITS OF BRICK RAW MATERIALS "SELIŠTE" AND "LUČINA" NEAR STALAČ, WITH PARTICULAR REFERENCE TO THE QUALITY AND USAGE POTENTIAL IN THE BRICK INDUSTRY Sreten Obradović, Vladimir Simić, Đorđe Simić, Milica Radovanović, Radomir Radunović	190
ZRINSKA GORA: NA RUBU SAVSKE SUTURNE ZONE Iva Olić, Borna Lužar-Oberiter, Bojan Matoš, Tamara Troškot-Čorbić	191
ZRINSKA GORA: AT THE MARGIN OF THE SAVA SUTURE ZONE Iva Olić, Borna Lužar-Oberiter, Bojan Matoš, Tamara Troškot-Čorbić	192
NOVI PRISTUP PROUČAVANJU TEKSTURA MINERALA ZNAČAJNIH ZA ISTRAŽIVANJE RUDNIH LEŽIŠTA Aleksandar Pačevski.....	193
NEW APPROACH TO THE STUDY OF MINERAL TEXTURES SIGNIFICANT FOR ORE DEPOSITS EXPLORATION Aleksandar Pačevski.....	194
PRIRODNA RANJIVOST KARSTNIH IZDANI SREDNJETRIJASKIH KREČNJAKA U OBLASTI IZMEĐU REKA BISTRICE, UVCA I LIMA Branislav Petrović, Veljko Marinović, Zoran Stevanović.....	195
INTRINSIC VULNERABILITY OF KARST AQUIFERS OF MIDDLE TRIASIC LIMESTONES IN THE AREA BETWEEN BISTRICA, UVAC AND LIM RIVERS Branislav Petrović, Veljko Marinović, Zoran Stevanović.....	196
POREKLO ASOCIJACIJE NI, AG I SN MINERALA U POLIMETALIČNOM LEŽIŠTU RUDNIK Stefan Petrović, Aleksandar Pačevski, Viktor Bertrandson Erlandson , Rade Jelenković.....	197
ORIGIN OF NI, AG AND SN MINERAL ASSOCIATION IN RUDNIK POLYMETALLIC DEPOSIT Stefan Petrović, Aleksandar Pačevski, Viktor Bertrandsson Erlandsson, Rade Jelenković.....	198
STATISTIČKA ANALIZA PODATAKA O KVALITETU UGLJA DELA LEŽIŠTA "RADLJEVO SEVER" Tatjana Petrović Čačić, Aleksandra Vuković, Vladimir Bačanac, Veselin Bakić	199
STATISTICAL ANALYSIS OF COAL QUALITY DATA OF DEPOSIT "RADLJEVO NORTH"	

18. Kongres geologa Srbije "Geologija rešava probleme", Divčibare, 01-04 jun 2022. 18 th Serbian Geological Congress "Geology solves the problems", Divcibare, June 01 st -04 th 2022.	Zbornik apstrakata Book of abstracts
--	---

Tatjana Petrović Čačić, Aleksandra Vuković, Vladimir Bačanac, Veselin Bakić	200
OSNOVNA HIDROGEOLOŠKA KARTA (OHGK) 100.000, LIST SMEDEREVO	
Tanja Petrović Pantić, Mihajlo Mandić, Katarina Atanasković Samolov	201
BASIC HYDROGEOLOGICAL MAPS (BHGM) 100.000, SHEET SMEDEREVO	
Tanja Petrović Pantić, Mihajlo Mandić, Katarina Atanasković Samolov	202
PROCENA NIVOVA PRIRODNE OSNOVE U PODZEMNIM VODAMA NA OSNOVU LITOLOGIJE I ANTROPOGENOG PRITISKA NA PRIMERU FRUŠKE GORE	
Tanja Petrović Pantić, Katarina Atanasković Samolov, Milan Tomić	203
ESTIMATING NATURAL BACKGROUND LEVELS IN GROUNDWATER BASED ON LITHOLOGY AND ANTHROPOGENIC PRESSURE ON THE EXAMPLE OF FRUŠKA GORA EXAMPLE	
Tanja Petrović Pantić, Katarina Atanasković Samolov, Milan Tomić	204
OSTRAKODE (CRUSTACEA) KAO INDIKATORI (PALEO)EKOLOŠKIH I (PALEO)KLIMATSKIH PROMENA	
Jovo Pokrajac, Tamara Karan-Žnidaršič & Ljupko Rundić	205
OSTRACODS (CRUSTACEA) AS INDICATORS OF (PALEO)ECOLOGICAL AND (PALEO)CLIMATE CHANGE	
Jovo Pokrajac, Tamara Karan-Znidaršič & Ljupko Rundić	206
PRILOG POZNAVANJU PUKOTINSKE IZDANI FORMIRANE U KRISTALASTIM ŠKRILJCIMA I GRANITOIDIMA PLANINSKOG MASIVA KUKAVICE	
Ljiljana Popović, Zoran Popović	207
CONTRIBUTION TO THE KNOWLEDGE OF FRACTURED AQUIFER FORMED IN THE CRYSTALLINE SCHIST AND GRANITOIDES OF THE MOUNTAIN MASSIF KUKAVICA	
Ljiljana Popović, Zoran Popović	208
GEOHEMIJSKE KARAKTERISTIKE UZORAKA SA DOMINANTNOM ALUNITSKOM FAZOM IZ LECKO-RADANSKOG VULKANSKOG KOMPLEKSA (SRBIJA)	
Maja Poznanović Spahić, Pavle Tančić, Darko Spahić	209
GEOCHEMICAL CHARACTERISTICS OF SAMPLES WITH DOMINANT PRESENCE OF ALUNITES FROM THE LECE-RADAN VOLCANIC COMPLEX (SERBIA)	
Maja Poznanović Spahić, Pavle Tančić, Darko Spahić	210
FORAMINIFERA AND RADIOLARIA FROM THE KANNAVIU FORMATION (UPPER CRETACEOUS, CAMPANIAN, CYPRUS)	
Polina Proshina, Liubov Bragina, Nikita Bragin, Efthymios Tsiolakis, Vasilis Symeou, Nikolaos Papadimitriou	211
JELEČ GRAD – JOŠ NEPRIZNAT OBJEKAT GEONASLEĐA	
Marija Radisavljević, Danica Srećković Batočanin, Vladan Vidosavljević, Irina Kajtez	212
JELEČ CASTLE – STILL UNRECOGNIZED GEOHERITAGE OBJECT	
Marija Radisavljević, Danica Srećković Batočanin, Vladan Vidosavljević, Irina Kajtez	213
EVOLUCIJA JUGOISTOČNOG DELA PANONSKOG BASENA I NJENE IMPLIKACIJE	
Dejan Radivojević	214
EVOLUTION OF SOUTHEASTERN PART OF THE PANNONIAN BASIN AND ITS IMPLICATIONS	
Dejan Radivojević	215
SADRŽAJ ELEMENATA RIJETKIH ZEMALJA U TRIJASKIM BOKSITIMA CRNE GORE	
Slobodan Radusinović, Mia Jovanović	216

18. Kongres geologa Srbije "Geologija rešava probleme", Divčibare, 01-04 jun 2022. 18 th Serbian Geological Congress "Geology solves the problems", Divčibare, June 01 st -04 th 2022.	Zbornik apstrakata Book of abstracts
--	---

CONTENT OF RARE EARTH ELEMENTS IN TRIASSIC BAUXITES OF MONTENEGRO Slobodan Radusinović, Mia Jovanović	217
IZVEDENA HIDROGEOLOŠKA ISTRAŽIVANJA ZA POTREBE STABILIZACIJE UNUTRAŠNJEG ODLAGALIŠTA POVRŠINSKOG KOPA „DRMNO“ Marijana Rajković, Dušan Polomčić, Dragoljub Bajić	218
HYDROGEOLOGICAL RESEARCH PERFORMED FOR STABILIZATION OF INTERNAL LANDFILL OF “DRMNO” OPEN PIT Marijana Rajković, Dušan Polomčić, Dragoljub Bajić	219
TEKTONSKA EVOLUCIJA SEVEROISTOČNIH DINARIDA Nikola Randelović, Branislav Trivić, Nemanja Krstekanić, Bojan Kostić, Uroš Stojadinović	220
TECTONIC EVOLUTION OF THE NORTH-EASTERN DINARIDES Nikola Randelović, Branislav Trivić, Nemanja Krstekanić, Bojan Kostić, Uroš Stojadinović	221
PRIMENA AUTOREGRESIVNOG MODELA, SIVOG MODELA I BILOT METODE NA IZVORIŠIMA PODZEMNIH VODA Jelena Ratković, Dušan Polomčić, Zoran Gligorić, Dragoljub Bajić	222
APPLICATION OF THE AUTOREGRESSIVE MODEL, GREY MODEL AND BILOT METHOD TO GROUNDWATER SOURCES Jelena Ratković, Dušan Polomčić, Zoran Gligorić, Dragoljub Bajić	223
ZNAČAJ I ULOGA GEOLOŠKOG ZAVODA REPUBLIKE SRPSKE U PROSTORNOM PLANIRANJU I PREVENCIJI HAZARDA I RIZIKA OD KLIZIŠTA Cvjetko Sandić, Dragan Mitrović, Koviljka Leka.....	224
SIGNIFICANCE AND ROLE OF THE GEOLOGICAL SURVEY OF THE REPUBLIC OF SRPSKA IN SPATIAL PLANNING AND PREVENTION OF LANDSLIDE HAZARD AND RISK Cvjetko Sandić, Dragan Mitrović , Koviljka Leka.....	225
FIZIČKO-HEMIJSKE I IZOTOPSKE KARAKTERISTIKE TERMALNIH VODA U SLIVU RIJEKE KRIVAJE Ćazim Šarić, Ferid Skopljak, Izet Žigić & Dinka Pašić-Škripić	226
PHYSICAL-CHEMICAL AND ISOTOPIC CHARACTERISTICS OF THERMAL WATERS IN THE KRIVAJA RIVER BASIN Ćazim Šarić, Ferid Skopljak, Izet Žigić & Dinka Pašić-Škripić	227
CEEPUS MREŽA CIII-RS-0038 NA RUDARSKO-GEOLOŠKOM FAKULTETU U BEOGRADU: PREKO DVE DECENIJE DOPRINOSA USAVRŠAVANJU STUDENATA I NASTAVNIKA Kristina Šarić.....	228
CEEPUS NETWORK CIII-RS-0038 AT THE FACULTY OF MINING AND GEOLOGY, UNIVERSITY OF BELGRADE: MORE THAN TWENTY YEARS OF CONTRIBUTION TO STUDENT AND TEACHER MOBILITY Kristina Šarić.....	229
REGIONALNI CENTAR ADRIA EIT RAWMATERIALS HUB Urša Šolc, Meta Dobnikar, Mateja Košir, Alenka Mauko Pranjić, Sibila Borojević Šoštarić, Vječislav Bohanek.....	230
REGIONAL CENTER ADRIA EIT RAWMATERIALS HUB Urša Šolc, Meta Dobnikar, Mateja Košir, Alenka Mauko Pranjić, Sibila Borojević Šoštarić, Vječislav Bohanek.....	232

18. Kongres geologa Srbije "Geologija rešava probleme", Divčibare, 01-04 jun 2022. 18 th Serbian Geological Congress "Geology solves the problems", Divčibare, June 01 st -04 th 2022.	Zbornik apstrakata Book of abstracts
--	---

GEOLOŠKE KARAKTERISTIKE LEŽIŠTA DOLOMITSKIH MERMERA KAO TEHNIČKO- GRAĐEVINSKOG KAMENA „STRAŽEVICA“ KOD BATOČINE Valentina Simić, Rajko Kondžulović, Dušan Simić, Slobodanka Lazarev, Milan Ljubičić, Jovana Njegomirović.....	234
GEOLOGICAL CHARACTERISTICS OF DOLOMITE MARBLE DEPOSIT AS TECHNICAL- BUILDING STONE „STRAŽEVICA“ NEAR BATOČINA Valentina Simić, Rajko Kondžulović, Dušan Simić, Slobodanka Lazarev, Milan Ljubičić, Jovana Njegomirović.....	235
PREZENTACIJA PROJEKTA "ZAŠTITA LEŽIŠTA MINERALNIH SIROVINA KAO OSNOVA SIGURNOG SNABDEVANJA MINERALNIM SIROVINAMA U EVROPI (SAFEMIN4EUROPE) Vladimir Simić, Rade Jelenković, Dragana Životić, Zoran Miladinović, Stefan Petrović, Marija Petrović.....	236
PRESENTATION OF THE PROJECT "MINERAL DEPOSITS SAFEGUARDING AS A BASIS OF EUROPE'S MINERAL RAW MATERIALS SAFETY (SAFEMIN4EUROPE) Vladimir Simić, Rade Jelenković, Dragana Životić, Zoran Miladinović, Stefan Petrović, Marija Petrović.....	237
GORNJOKREDNI MAGMATIZAM SAVA-VARDAR ZONE Kristijan Sokol, Dejan Prelević.....	238
UPPER CRETACEOUS MAGMATISM IN THE SAVA VARDAR ZONE Kristijan Sokol, Dejan Prelević.....	239
PRIMENA GEOFIZIČKIH ISTRAŽIVANJA ZA REŠAVANJE PROBLEMA PROCURIVANJA NASUTE ZEMLJANE BRANE Branislav Sretković, Dejan Vučković, Dejan Miloševski.....	240
APPLICATION OF GEOPHYSICAL RESEARCH FOR SOLVING THE PROBLEM OF THE EARTHFILL DAM LEAKING Branislav Sretković, Dejan Vučković, Dejan Miloševski.....	241
OBDUKCIJA OFIOLITA NA AFRIČKU PLOČU TOKOM SUŽAVANJA TETISA: DOPRINOS NUMERIČKIH SIMULACIJA Nikola Stanković, Vesna Cvetkov, Vladica Cvetković.....	242
OPHIOLITE OBDUCTION ONTO THE AFRICAN PLATE DURING THE NARROWING OF TETHYS: CONTRIBUTION FROM NUMERICAL SIMULATIONS Nikola Stanković, Vesna Cvetkov, Vladica Cvetković.....	243
HARMONIZACIJA PODATAKA KORIŠĆENJEM POVEZANIH OTVORENIH PODATAKA Ranka Stanković.....	244
DATA HARMONIZATION USING LINKED OPEN DATA Ranka Stanković.....	245
FACIJALNE KARAKTERISTIKE BERIJAS – VALENDINA JUŽNOG DELA GETSKE KARBONATNE PLATFORME (JUGOISTOČNA SRBIJA) Jelena Stefanović, Giovanna Della Porta and Dejan Radivojević.....	247
FACIES CHARACTER OF THE BERRIASIAN – VALANGINIAN IN THE SOUTHERN PART OF THE GETIC CARBONATE PLATFORM (SOUTHEASTERN SERBIA) Jelena Stefanović, Giovanna Della Porta and Dejan Radivojević.....	248
PLAVINE VRŠAČKIH PLANINA – EROZIJA I AKUMULACIJA KONTINENTALNE FAZE SEDIMENTACIJE PLIOCENA I KVARTARA Petar Stejić, Tivadar Gaudenji, Danica Popović.....	249

18. Kongres geologa Srbije "Geologija rešava probleme", Divčibare, 01-04 jun 2022. 18 th Serbian Geological Congress "Geology solves the problems", Divcibare, June 01 st -04 th 2022.	Zbornik apstrakata Book of abstracts
--	---

PROLUVIAL FANS OF VRŠAC MOUNTAINS – EROSION AND ACCUMULATION OF THE CONTINENTAL PHASE OF PLIOCENE AND QUATERNARY SEDIMENTATION Petar Stejić, Tivadar Gaudenyi, Danica Popović	250
FUZZY VIKOR PRISTUP: OCENJIVANJE KRITERIJUMA I IZBOR OPTIMALNE ALTERNATIVE ZA UPRAVLJANJE PODZEMNIM VODAMA Milica Stepanović, Dragoljub Bajić , Dušan Polomčić	251
THE FUZZY VIKOR APPROACH: EVALUATION OF CRITERIA AND SELECTION OF THE BEST GROUNDWATER MANAGEMENT ALTERNATIVE Milica Stepanović, Dragoljub Bajić, Dušan Polomčić	252
PREDNOSTI METODA FUZZY OPTIMIZACIJE U ODNOSU NA KLASIČNE METODE KOD REŠAVANJA PROBLEMA ZAŠTITE OD PODZEMNIH VODA Milica Stepanović, Dragoljub Bajić , Dušan Polomčić	253
ADVANTAGES OF FUZZY OPTIMIZATION METHODS OVER CONVENTIONAL APPROACHES TO PROBLEM SOLVING RELATED TO PROTECTION AGAINST GROUNDWATER Milica Stepanović, Dragoljub Bajić, Dušan Polomčić	254
PODZEMNE VODE – KLJUČNI RESURS BUDUĆNOSTI I NAJBOLJI INDIKATOR STANJA ŽIVOTNE SREDINE Stevanović Zoran.....	255
NOVA SAZNAJNA O TEKTONSKOJ EVOLUCIJI SAVA ZONE (CENTRALNA SRBIJA) Uroš Stojadinović, Nemanja Krstekanić, Liviu Matenco, Tamara Bogdanović	256
NEW INSIGHTS INTO THE TECTONIC EVOLUTION OF THE SAVA ZONE (CENTRAL SERBIA) Uroš Stojadinović, Nemanja Krstekanić, Liviu Matenco, Tamara Bogdanović	257
MOŽEMO LI VEROVATI PODACIMA? (ZNAČAJ KONTROLE KVALITETA U HIDROHEMIJSKIM ISTRAŽIVANJIMA) Jana Štrbački	258
CAN WE TRUST THE DATA? (THE IMPORTANCE OF QUALITY CONTROL IN HYDROCHEMICAL RESEARCH) Jana Štrbački	259
FORMACIJA ILI GRUPA BULOG? NOVA SAGLEDAVANJA SREDNJO-KASNO ANIZIJSKE DEPOZICIONE ISTORIJE DINARIDA Milan N. Sudar, Hans-Jürgen Gawlick.....	260
BULOG FORMATION OR BULOG GROUP? NEW INSIGHTS IN THE MIDDLE-LATE ANISIAN DEPOSITIONAL HISTORY IN THE DINARIDES Milan Sudar, Hans-Jürgen Gawlick	261
KRISTALOGRAFSKE KARAKTERISTIKE MINERALA TENARDITA I ANKERITA IZ LIBIJE Pavle Tančić	262
CRYSTALLOGRAPHIC CHARACTERISTICS OF THENARDITE AND ANKERITE MINERALS FROM LIBYA Pavle Tančić	263
TUNGSTEN AND URANIUM IN ALLUVIAL SOILS OF THE GRANTCHARITSA DEPOSIT (BULGARIA) Mihail Tarassov, Eugenia Tarassova, Elena Tacheva, Milen Stavrev	264
MATIČNE STENE BADENA SEGEDINSKE DEPRESIJE Slađana Teslić, Goran Bogičević, Sanja Trifunčević, Vladislav Gajić, Ivan Dulić	265

18. Kongres geologa Srbije "Geologija rešava probleme", Divčibare, 01-04 jun 2022. 18 th Serbian Geological Congress "Geology solves the problems", Divčibare, June 01 st -04 th 2022.	Zbornik apstrakata Book of abstracts
--	---

BADENIAN SOURCE ROCKS OF SZEGED DEPRESSION

Sladana Teslić, Goran Bogičević, Sanja Trifunčević, Vladislav Gajić, Ivan Dulić266

LABORATORIJSKA ISPITIVANJA MATIČNIH STENA IZ BUŠOTINE POLJA IDOŠ

Sladana Teslić, Velinka Ćurčić, Vladica Milićević, Predrag Cvijić, Miloš Tripković,
Valerija Cingeli267

LABORATORY TESTING OF SOURCE ROCK FROM WELL OF OIL FIELD IDOŠ

Sladana Teslić, Velinka Ćurčić, Vladica Milićević, Predrag Cvijić, Miloš Tripković,
Valerija Cingeli..... 268

GEOLOSKI PROFIL PLANINE AVALE (SEVERNA ŠUMADIJA) - UVID U LITOSTRATIGRAFIJU I TEKTONSKE STRUKTURE

Marinko Toljić, Bojan Glavaš-Trbić, Maja Maleš i Nikola Randelović269

GEOLOGICAL PROFILE ACROSS THE AVALA MT (NORTHERN ŠUMADIJA) – INSIGHT INTO LITHOSTRATIGRAPHY AND TECTONIC STRUCTURES

Marinko Toljić, Bojan Glavaš-Trbić, Maja Maleš and Nikola Randelović270

STRATIGRAFSKI I TEKTONSKI POLOZAJ GORNJOKREDNIH KREČNJAKA RUJEVCA (ZAPADNA SRBIJA)

Marinko Toljić, Bojan Glavaš-Trbić i Danica Srećković-Batočanin271

STRATIGRAPHIC AND TECTONIC SETTING OF THE UPPER CRETACEOUS LIMESTONES OF RUJEVAC (WESTERN SERBIA)

Marinko Toljić, Bojan Glavaš-Trbić and Danica Srećković-Batočanin.....273

DIREKTNI EKONOMSKI EFEKTI VALORIZACIJE MINERALNE SIROVINE IZ RUDNIH LEŽIŠTA

Radule Tošović.....274

DIRECT ECONOMIC EFFECTS OF VALORIZATION OF MINERAL RAW MATERIALS FROM ORE DEPOSITS

Radule Tošović.....275

AKTUELNI FAKTORI PROMENE EKONOMSKE OCENE REZULTATA GEOLOŠKIH ISTRAŽIVANJA I MINERALNIH REZERVI RUDNIH LEŽIŠTA

Radule Tošović.....276

CURRENT CHANGE FACTORS OF ECONOMIC EVALUATION OF GEOLOGICAL EXPLORATION RESULTS AND MINERAL RESERVES OF ORE DEPOSITS

Radule Tošović.....277

PREDNOSTI PRIMENE PROGRAMSKOG JEZIKA „PYTHON” U RAZVOJU HIDROLOŠKIH MODELA

Milan Tucaković, Dragoljub Bajić, Vesna Ristić Vakanjac, Dušan Polomčić278

ADVANTAGES OF PYTHON PROGRAMMING LANGUAGE IN HYDROLOGICAL MODEL DEVELOPMENT

Milan Tucaković, Dragoljub Bajić, Vesna Ristić Vakanjac, Dušan Polomčić279

POSTUPAK ZA 2D LINEARNU INVERZIJU GRAVIMETRIJSKIH PODATAKA - TESTIRANJE I PRIMENA

Ivana Vasiljević, Branislav Sretković, Ivan Dulić, Vladislav Gajić280

METHOD FOR 2D LINEAR INVERSION OF GRAVITY DATA - TESTING AND APPLICATION

Ivana Vasiljević, Branislav Sretković, Ivan Dulić, Vladislav Gajić281

MODELI RASPODELE GUSTINE U NEOGENOM KOMPLEKSU BAČKOG PLATOJA I NJIHOVA PRIMENA

Ivana Vasiljević, Ivan Dulić, Snežana Ignjatović, Vladislav Gajić.....282

DENSITY DISTRIBUTION MODELS FOR NEOGENE COMPLEX OF BAČKA PLATEAU AND THEIR APPLICATION

Ivana Vasiljević, Ivan Dulić, Snežana Ignjatović, Vladislav Gajić.....283

KOORDINISANA MIOCENSKA ROTACIJA U PRAVCU KAZALJKE NA SATU VARDARSKE ZONE I JEDINICE DRINA-IVANJICA

Máté Velki, Emő Márton, Vesna Cvetkov284

COORDINATED MIOCENE CLOCKWISE ROTATION OF THE VARDAR ZONE AND THE DRINA-IVANJICA UNIT

Máté Velki, Emő Márton, Vesna Cvetkov285

GEOLOGIJA HIDROTERMALNOG CU-AU SISTEMA ČUKARU PEKI

Miloš Velojić.....286

THE GEOLOGY OF HYDROTHERMAL CU-AU SYSTEM ČUKARU PEKI

Miloš Velojić.....287

GEOLOŠKE KARAKTERISTIKE I EKONOMSKI ZNAČAJ DOLOMITA OKOLINE ULCINJA

Branko Vilotijević, Darko Božović.....288

GEOLOGICAL CHARACTERISTICS AND ECONOMICAL SIGNIFICANCE OF DOLOMITES AROUND ULCINJ

Branko Vilotijević, Darko Božović.....289

HIDROGEOLOŠKE KARAKTERISTIKE PODRUČJA CERNIČKOG POLJA I KLJUČKE RIJEKE

Petar Vojnović.....290

HYDROGEOLOGICAL CHARACTERISTICS OF THE KLJUČKA RIJEKA AND CERNIČKO POLJE AREA

Petar Vojnović.....291

MIKROELEMENTI U KVARTARNIM SEDIMENTIMA I LIGNITU KOSTOLAČKO-KOVINSKOG UGLJONOSNOG BASENA, ISTOČNA SRBIJA – ODABRANI PRIMERI

Bogoljub Vučković, Biljana Radovanović, Dragana Životić.....292

TRACE ELEMENTS IN QUATERNARY SEDIMENTS AND LIGNITE FROM THE KOSTOLAC-KOVIN COAL BASIN - SELECTED EXAMPLES

Bogoljub Vučković, Biljana Radovanović, Dragana Životić.....293

REZULTATI GEOLOŠKIH ISTRAŽIVANJA LIGNITA KOSTOLAČKO-KOVINSKOG UGLJONOSNOG BASENA – GEOLOŠKE I MORFOSTRUKTURNE KARAKTERISTIKE

Bogoljub Vučković, Biljana Radovanović, Vesna Matić, Lidija Glamočanin, Bogdan Radić, Ksenija Eraković, Dragana Životić294

RESULTS OF GEOLOGICAL EXPLORATIONS OF LIGNITE IN THE KOSTOLAC-KOVIN COAL BASIN - GEOLOGICAL AND MORPHOSTRUCTURAL FEATURES

Bogoljub Vučković, Biljana Radovanović, Vesna Matić, Lidija Glamočanin, Bogdan Radić, Ksenija Eraković, Dragana Životić295

NEW DATA ON THE UPPER ALBIAN AMMONITES FROM THE TOPOLA AREA (CENTRAL SERBIA)

Marija Vuletić, Nevenka Đerić, László Bujtor, Katarina Bogićević, Draženko Nenadić.....296

NOVI PODACI O GORNJOALBSKIM AMONITIMA OKOLINE TOPOLE (CENTRALNA SRBIJA)

Marija Vuletić, Nevenka Đerić, László Bujtor, Katarina Bogićević, Draženko Nenadić.....297

HALKANTIT KAO SEKUNDARNI MINERAL BAKRA U LEŽIŠTU ČOKA MARIN, SRBIJA

Alena Zdravković, Aleksandar Pačevski, Predrag Dabić, Periša Živković.....298

18. Kongres geologa Srbije "Geologija rešava probleme", Divčibare, 01-04 jun 2022. 18 th Serbian Geological Congress "Geology solves the problems", Divcibare, June 01 st -04 th 2022.	Zbornik apstrakata Book of abstracts
--	---

CHALCANTHITE AS A SECONDARY COPPER MINERAL IN THE ČOKA MARIN DEPOSIT, SERBIA

Alena Zdravković, Aleksandar Pačevski, Predrag Dabić, Periša Živković.....299

SEDIMENTOLOŠKE KARAKTERISTIKE MIOCENSKIH NASLAGA DONJE TREPČE

Ana Zeković, Violeta Gajić, Ljupko Rundić, Sabina Kovač.....300

SEDIMENTOLOGICAL CHARACTERISTICS OF MIOCENE DEPOSITS OF DONJA TREPČA

Ana Zeković, Violeta Gajić, Ljupko Rundić, Sabina Kovač.....301

ZAŠTITA PODZEMNIH VODA U RAZLIČITIM FAZAMA ISTRAŽIVANJA LEŽIŠTA MINERALNIH SIROVINA

Vladimir Živanović, Nebojša Atanacković302

GROUNDWATER PROTECTION IN DIFFERENT PHASES OF RAW MINERAL DEPOSIT RESEARCH

Vladimir Živanović, Nebojša Atanacković303

PRAURIJA KAO OBJEKAT GEONASLEDA LEŽIŠTA MAJDANPEK

Periša Živković, Slobodan Živković304

PRAURIJA AS A PART OF GEOHERITAGE OF MAJDANPEK MINERAL DEPOSIT

Periša Živković, Slobodan Živković305

PRIRODNA RANJIVOST KARSTNIH IZDANI SREDNJETRIJASKIH KREČNJAKA U OBLASTI IZMEĐU REKA BISTRICE, UVCA I LIMA

Branislav Petrović, Veljko Marinović, Zoran Stevanović

Rudarsko-geološki fakultet, Beograd, Srbija

E-mail: branislav.petrovic@rgf.bg.ac.rs

Ključne reči: karstna izdan, Priboj, prirodna ranjivost izdani, COP metoda

Ocena prirodne ranjivosti izdani od zagađenja predstavlja neophodnu osnovu za planiranje i upravljanje podzemnim vodnim resursima u pogledu njihove zaštite, procene rizika od zagađenja, kao i preduzimanje preventivnih mera u pogledu očuvanja kvaliteta podzemnih voda. Pojam ranjivosti izdani se bazira na pretpostavci da prirodno okruženje određuje zaštitu izdani nasuprot ljudskom uticaju, s obzirom na zagađivače koji mogu dospeti u podzemlje. Uprkos postojanju brojnih metoda procene ranjivosti podzemnih voda, do sada nijedna nije dala neke opšte standarde za odabir i procenu parametara iako su učinjeni veliki naporu u okviru Evropske unije da se postigne taj cilj. Karte ranjivosti podzemnih voda pokazuju manje ili više subjektivno viđenje kapaciteta potpovršinskog okruženja da zaštiti podzemnu vodu, pre svega u smislu kvaliteta vode. Subjektivnost se ogleda u tome što se mora odgovoriti na zahteve i uslove koje je postavio korisnik karte. Karta ranjivosti područja između tri reke Uvac, Bistrica i Lim je izrađena uz primenu GIS tehnologije i upotrebu COP metode kartiranja ranjivosti. S obzirom da COP metoda daje odlične rezultate u okruženjima gde se javljaju karstni tereni, ali i tereni izgrađeni od drugih tipova stena (i poroznosti), ova metoda je odabrana za ocenu ranjivosti izdani na navedenom istražnom prostoru.

Prostor za koji je izrađena karta ranjivosti podzemnih voda nalazi se između reka Bistrice, Uvca i Lima, a administrativno pripada opštinama Priboj i Nova Varoš. Opština Priboj pripada grupi opštinskih centara jugozapadne Srbije, čiji se vodosnabdevanje bazira na kombinovanoj upotrebi podzemnih voda karstne izdani i površinskih voda. Vodosnabdevanje gradskog područja Opštine Priboj odvija se preko tri karstna vrela – Čelice, Bjeličkovica i Saračevina, koji doprinose ukupnom vodosnabdevanju stanovništva pijaćom vodom u iznosu od prosečnih 45 l/s, 25 l/s i 15 l/s, respektivno. Vrela Bjeličkovica i Saračevina se nalaze nedaleko od sela Kratovo (teritorija Opštine Priboj), na levoj obali Kratovske reke na oko 2 km pre njenog ušća u reku Lim. Vrelo Čelice, iako kaptirano za Priboj, nalazi na teritoriji Opštine Nova Varoš (selo Čelice), u jugozapadnom podnožju Velikog Oštika (1283 m.n.m.). Pored pomenuta tri karstna vrela, dodatne količine pijaće vode obezbeđuju se preko cevovoda iz akumulacije Radojnjskog jezera, na reci Uvac. Jedan od zadataka koje je trebalo rešiti prilikom definisanja zona sanitarne zaštite izvorišta malomineralizovanih podzemnih voda karstnih vrela Bjeličkovica i Čelice bio je i izrada karte ranjivosti izdani.

Na karti ranjivosti podzemnih voda dobijenom COP metodom se jasno vidi da je prostor sa najvećim stepenom ranjivosti područje otvorenog karsta, na kome se atmosferske vode direktno infiltriraju u podzemlje. Vrednost COP indeksa ranjivosti na istražnom prostoru se kreću u rasponu 0,15 do 6,4 pri čemu visoke vrednosti indeksa označavaju visok stepen prirodne zaštite i male ranjivosti. U okviru terena koji pripada pojedinačnim oblastima prihranjivanja vrela Čelice i vrela Bjeličkovica (vrelo Saračevina je obuhvaćeno slivom Bjeličkovice) veliki deo odlikuje se veoma visokom ranjivošću, sa indeksom ranjivosti od 0,0 do 0,5. U pogledu površina to je 5,39 km², što čini 67,47 % površine sliva vrela Bjeličkovica, dok u slučaju vrela Čelice ta površina iznosi 1,87 km² ili 58,9% površine. Klasa Visoka ranjivost, sa indeksom ranjivosti od 0,5 do 1, pokriva 0,17 km² (2,18%) površine sliva vrela Bjeličkovica i 0,07 km² (2,07%) površine sliva vrela Čelice. Na osnovu analize ranjivosti, može se zaključiti da na terenu postoji mogućnost zagađenja podzemnih voda, pa se stoga propisane mere za održavanje zona sanitarne zaštite izvorišta moraju strogo primenjivati u cilju očuvanja dobrog kvaliteta podzemnih voda.

INTRINSIC VULNERABILITY OF KARST AQUIFERS OF MIDDLE TRIASIC LIMESTONES IN THE AREA BETWEEN BISTRICA, UVAC AND LIM RIVERS

Branislav Petrović, Veljko Marinović, Zoran Stevanović

Faculty of Mining and Geology, Belgrade, Serbia

E-mail: branislav.petrovic@rgf.bg.ac.rs

Key words: karst aquifer, Priboj, natural vulnerability, COP method

Assessment of intrinsic vulnerability of aquifer is a necessary basis for planning and management of groundwater resources in terms of their protection, risk assessment of pollution, as well as taking preventive measures to preserve groundwater quality. The term vulnerability of aquifer is based on the assumption that the natural environment provides the protection of aquifer against human influence, given the pollutants that can reach the underground. Despite the existence of numerous methods for assessing groundwater vulnerability, so far none has provided any general standards for the selection and assessment of parameters, although great efforts have been made within the European Union to achieve this goal. Groundwater vulnerability maps show a more or less subjective view of the capacity of the subsurface environment to protect groundwater, primarily in terms of water quality. Subjectivity is reflected in the fact that the requirements and conditions set by the map user must be answered. The vulnerability map of the area between the three rivers Uvac, Bistrica and Lim was made using GIS technology and using the COP vulnerability mapping method. Since the COP method gives excellent results in environments where karst terrains occur, but also terrains built of other types of rocks (and porosity), this method was chosen to assess the vulnerability issued in the specified exploration area. The area for which the groundwater vulnerability map was made is located between the rivers Bistrica, Uvac and Lima, and administratively it belongs to the municipalities of Priboj and Nova Varoš. The Municipality of Priboj belongs to the group of municipal centres of southwestern Serbia, whose water supply is based on the combined use of karst groundwater and surface water. The water supply of the urban area of the Municipality of Priboj takes place through three karst springs Čelice, Bjeličkovića and Saračevina, which contribute to the total water supply of the population with drinking water in the amount of 45 l/s, 25 l/s and 15 l/s, respectively. The springs Bjeličkovića and Saračevina are located near the village of Kratovo (territory of the Municipality of Priboj), on the left bank of the Kratovska River, about 2 km before its confluence with the Lim River. Vrelo Čelice, although captured for the Municipality of Priboj, is located on the territory of the Municipality of Nova Varoš, at the southwestern foothill of Veliki Oštrik. Besides the mentioned three karst springs, additional quantities of drinking water are provided through the pipeline from the accumulation of Radojnja Lake, on the Uvac river. One of the tasks that needed to be solved during the determination of the sanitary protection zones of the springs of low-mineralized groundwater of the karst springs Bjeličkovića and Čelice was design of a vulnerability map. The groundwater vulnerability map obtained by the COP method clearly shows that the area with the highest degree of vulnerability is the area of open karst, where atmospheric water directly infiltrates underground. The values of the COP vulnerability index in the research area range from 0.15 to 6.4, with high values of the index indicating a high degree of natural protection and low vulnerability. Within the terrain that belongs to the catchment area of the karst springs Čelice and Bjeličkovića (the Saračevina spring is included in the Bjeličkovića catchment area), a large part is characterized by Very high vulnerability, with a vulnerability index of 0.0 to 0.5. In terms of area, it is 5.39 km², which is 67.47% of the area of the Bjeličkovića catchment area, while in the case of the Čelice catchment area this is 1.87 km² or 58.9% of the area. The High vulnerability class, with a vulnerability index of 0.5 to 1, covers 0.17 km² (2.18%) of the Bjeličkovića catchment area and 0.07 km² (2.07%) of the Čelice catchment area. Based on the analysis of vulnerability, it can be concluded that there is a possibility of groundwater pollution, so the prescribed measures for the maintenance of defined sanitary protection zones of karst springs must be strictly applied in order to preserve good groundwater quality.