

7. HRVATSKI GEOLOŠKI KONGRES
s međunarodnim sudjelovanjem

7TH CROATIAN GEOLOGICAL CONGRESS
with international participation

02. – 04. 10. 2023.
Poreč, Croatia

7 HGK

Knjiga sažetaka
Book of Abstracts

Urednica – Editor
Karmen Fio Fir

7. hrvatski geološki kongres s međunarodnim sudjelovanjem

7th Croatian Geological Congress with international participation

Poreč 02.–04.10.2023.

Organizatori – Organized by

Hrvatsko geološko društvo – Croatian Geological Society, glavni organizator kongresa
Hrvatski geološki institut – Croatian Geological Survey
Sveučilište u Zagrebu, Prirodoslovno-matematički fakultet – University of Zagreb, Faculty of Science
Sveučilište u Zagrebu, Rudarsko-geološko-naftni fakultet – University of Zagreb, Faculty of Mining, Geology and Petroleum Engineering
INA – Industrija nafte d.d. – INA Oil Industry Plc.
Hrvatski prirodoslovni muzej – Croatian Natural History Museum
Sveučilište u Zagrebu, Geotehnički fakultet Varaždin – University of Zagreb, Faculty of Geotechnical Engineering
Agencija za ugljikovodike – Croatian Hydrocarbon Agency

Pokrovitelji – Under the patronage of

Istarska županija
Ministarstvo znanosti i obrazovanja
Ministarstvo gospodarstva i održivog razvoja
Ministarstvo prostornoga uređenja, graditeljstva i državne imovine
Turistička zajednica Istarske županije, Poreč

Sponzori – Sponsors

Turistička zajednica Grada Poreča
GEO-5 d.o.o., Rovinj
Geokon-Zagreb d.d.
INA-Industrija nafte d.d., Zagreb
JANAF, Zagreb
Kamen d.d., Pazin
Velički kamen d.o.o., Velika
Wienerberger d.o.o., Karlovac
AZU – Agencija za ugljikovodike

Donatori – Donors

Aura proizvodi d.o.o., Buzet
Javna ustanova Natura Histrica, Pula
LIMES PLUS d.o.o., Zagreb
Vina Petrovečki, Sveti Križ Začretje
Zagrebačka pivovara, Zagreb

Organizacijski odbor – Organizing committee

Slobodan Miko – predsjednik
Bruno Aljinović
Tomislav Brenko
Josip Bužnić
Andrea Čobić
Igor Felja
Tea Fluksi
Karmen Fio Firi
Ladislav Fuček
Anita Grizelj
Vlatko Gulam
Nikolina Ilijanić
Goran Jović
Ivan Kosović
Dražen Kurtanjek
Dubravko Lučić
Ana Majstorović Bušić
Jasminka Martinjak
Marta Mileusnić
Kristina Novak Zelenika
Damir Palenik
Ivica Pavičić
Krešimir Petrinjak
David Rukavina
Sabina Strmić Palinkaš
Josip Terzić
Mirela Žic

Programsko-znanstveni odbor – Scientific committee

Damir Slovenec - predsjednik
Petra Bajo
Koraljka Bakrač
Miloš Bavec (SLO)
Mirko Belak
Ranko Biondić
Staša Borović
Mihovil Brlek
Željko Duić
Željka Fiket
Alessandro Fontana (IT)
Vesnica Garašić
Morana HERNITZ-Kučenjak
Marija Horvat
Petra Jamšek Rupnik (SLO)
Branko Kordić
Martin Krkač
Oleg Mandić (AT)
Tamara Marković
Aleksandar Mezga
Zorica Petrincec
Đurđica Pezelj
Davor Pollak
Slobodan Radusinović (CG)
Ferid Skopljak (BiH)
Duje Smirčić

Ankica Oros Sršen
Zoran Stevanović (SRB)
Maša Surić
Nenad Tomašić
Tamara Troskot-Čorbić
Tatjana Vlahović
Alan Vranjković
Domagoj Vukadin

ISSN 1849-7713

Izdavač – Published by: Hrvatski geološki institut – Croatian Geological Survey – Zagreb

Urednica – Edited by: Karmen Fio Firi

Izrada logotipa – Logotype production: Jasna SEVEREC, Hrvatski geološki institut – Croatian Geological Survey – Zagreb

Oblikovanje – Layout and design: Igor VRESK / LASERplus, Ul. grada Vukovara 274, Zagreb

Izdano – Issued: rujan 2023, 200 primjeraka – September 2023, 200 copies

Tisak – Printed by: LASERplus, Ul. grada Vukovara 274, Zagreb

7. HRVATSKI GEOLOŠKI KONGRES
s međunarodnim sudjelovanjem
7TH CROATIAN GEOLOGICAL CONGRESS
with international participation

02. – 04. 10. 2023.
Poreč, Croatia

KNJIGA SAŽETAKA
BOOK OF ABSTRACTS

7 HGK

Urednica – Editor:
Karmen FIO FIRI

CONTENT

CRITICAL RAW MATERIALS ACT AND ITS IMPLICATIONS FOR THE ADRIA REGION Sibila Borojević Šoštarić	1
CHANGES IN MICROFOSSIL ASSEMBLAGES: A CASE STUDY FROM THE MIOCENE DEPOSITS OF THE NORTH CROATIAN BASIN Valentina Hajek-Tadesse	3
INA HC EXPLORATION ACTIVITIES IN CROATIA Goran Jović & Tomislav Baketarić	5
COASTAL EROSION – GLOBAL PROBLEM AND CROATIAN EXPERIENCE Kristina Pikelj	6
DEVELOPMENT AND APPLICATION OF GEOTHERMAL ENERGY IN THE REPUBLIC OF CROATIA WITHIN THE NRRF PROJECT Martina Tuschl	8
THE BENEFITS OF SYSTEMIZING THE NEW COLLECTION OF CROATIAN NATURAL HISTORY MUSEUM RELATED TO OIL AND GAS EXPLORATION DATA IN CROATIA Bruno Aljinović, Tatjana Vlahović	9
THE PERMIAN-TRIASSIC BOUNDARY INTERVAL IN THE VELEBIT MOUNTAINS: NEW FACIES, BIO- AND CHEMOSTRATIGRAPHIC FEATURES Dunja Aljinović, Sylvain Richoz, Duje Smirčić, Yanlong Chen, Galina Nestell, Ivan Jazvac	10
RECONSTRUCTION OF LATE MIOCENE AND EARLY PIOCENE DIACHRONOUS INFILL OF MURA AND DRAVA DEPRESSION Tomislav Baketarić, Alan Vranjković, Daniel Nyiri, Imre Magyar, Davor Pavelić	11
FIRST PALYNOLOGICAL RESULTS FROM SPILA NAD PROCJEPOM CAVE, MLJET Koraljka Bakrač, Olena Sirenko, Dario Hruševar, Vībora Novak, Ankica Oros Sršen	12
EXPERIENCES OF APPLYING THE COMBINED APPROACH METHODOLOGY ON THE EXAMPLE OF THE SUTLA RIVER RECIPIENT Nikolina Bakšić Pavlović, Lea Petohleb, Morana Belamarić Šaravanja	13
SIGNIFICANCE OF THE GARNETS FOR THE INTERPRETATION OF THE POLYMETAMORPHIC TERRANE COMPLEX EVOLUTION IN THE SLAVONIAN MTS. Dražen Balen	14
IMPACT OF MECHANICAL STRATIGRAPHY ON DEFORMATION STYLE IN THE CENTRAL EXTERNAL DINARIDES: A 2D FORWARD KINEMATIC MODELLING STUDY Philipp Balling, Bruno Tomljenović, Kamil Ustaszewski	15
HOW COMPATIBLE ARE THE N-ALKANE BIOMARKERS AND POLLEN? A CASE STUDY OF THE LAKE VRANA DEPOSITS, CROATIA Ivona Baniček, Koraljka Bakrač, Oliver Rach, Dirk Sachse, Nikolina Ilijanić, Ozren Hasan, Slobodan Miko	16
UPPER TRIASSIC LITHOFACIES AT LOKVE SECTION, GORSKI KOTAR AREA – INDICATORS OF PALAEOENVIRONMENTAL AND PALAEOCLIMATIC CHANGES Uroš Barudžija, Duje Smirčić, Viktória Baranyi, Ivor Perković, Ivor Pavić	17
LITHOLOGY, MINERALOGY, GEOCHEMISTRY AND CHRONOSTRATIGRAPHY OF DUNE SAND AND INTRAFORMATIONAL SOILS RICH IN HEAVY MINERALS IN PODRAVINA, NORTHEASTERN CROATIA Koen Beerten, Nina Hečej, Mihajlo Pandurov, Petar Stejić, Rodoljub Gajić, Ajka Šorša, Jasminka Martinčević Lazar, Lidija Galović	18
MIDDLE TRIASSIC SYN-RIFT RHYOLITES AND RHYOLITIC IGNYMBRITES ON THE NORTH-EAST MARGIN OF ADRIA (NE SLOVENIA, NW CROATIA): POSSIBLE SOURCE OF RHYOLITIC TUFFS (PIETRA VERDE) IN THE WIDER DINARIDE AREA Mirko Belak, Damir Slovenec, Duje Smirčić, Marija Horvat, Branimir Šegvić, Duje Kukoč, Tonči Grgasović, Matija Vukovski	19
KVARNERIĆ POLJE AND ZRMANJA PALEORIVER DURING LAST GLACIAL MAXIMUM Čedomir Benac, Neven Bočić, Igor Ružić, Mladen Juračić	20
THE LANDSLIDE SUSCEPTIBILITY ASSESSMENT FOR APPLICATION IN THE SPATIAL PLANNING SYSTEM: FROM NATIONAL TO LOCAL SCALE Sanja Bernat Gazibara, Marko Sinčić, Martin Krkač, Hrvoje Lukačić, Gabrijela Šarić, Petra Jagodnik, Snježana Mihalić Arbanas	22
PETROGRAPHIC, MINERALOGICAL AND CHEMICAL CHARACTERISTICS OF BAUXITE FROM POSUŠJE DEPOSITS, BOSNIA AND HERZEGOVINA – AGE MERA PROJECT RESEARCH Šime Bilić, Irena Peytcheva, Stoyan Georgiev, Atanas Hikov, Ivica Pavičić, Franjo Šumanovac, Marko Holma	23
SEA WATER IMPACT ON THE COASTAL KARSTIC AQUIFER BOKANJAC-POLIČNIK Ranko Biondić, Hrvoje Meaški, Lucija Plantak, Jelena Loborec, Karlo Leskovar	24
PETROLEUM GEOCHEMISTRY SUMMARY OF THE HUNGARIAN PART OF THE DRAVA DEPRESSION Snježana Blažeković Smojić, Katalin Milota	25
WHAT IS THE AGE OF BARAČ CAVE SYSTEM? Neven Bočić, Petra Bajo, Dražen Perica, Denis Scholz	26
CEEPUS NETWORK CIII-RS-0038: RECOGNITION OF CHALLENGES IN GEOLOGICAL EDUCATION IN SOUTH-EASTERN EUROPE AND PROMPT RESPONDS Sibila Borojević Šoštarić, Kristina Šarić	27
DEEPWATER-CE: DEVELOPMENT OF AN INTEGRATED IMPLEMENTATION FRAMEWORK FOR MANAGED AQUIFER RECHARGE SOLUTIONS TO FACILITATE THE PROTECTION OF CENTRAL EUROPEAN WATER RESOURCES ENDANGERED BY CLIMATE CHANGE AND USER CONFLICT Staša Borović, Matko Patekar, Josip Terzić, Marco Pola, Ivan Kosović, Maja Briški	28
MULTIDISCIPLINARY APPROACH TO CONCEPTUAL MODELLING OF HYDROTHERMAL SYSTEMS Staša Borović, Marco Pola, Mirja Pavić, Ivan Kosović, Kosta Urumović, Bojan Matoš, Ivica Pavičić, Maja Briški	29
NEW FINDS OF MIOCENE FOSSILS FROM THE BUKOVA GLAVA LOCALITY (NEXE D.D., NAŠICE, CROATIA) Željko Bortek, Mandica Stjepanović, Vladimir Filipović, Davor Vrsaljko, Stjepan Ergović	31
GENERATING LOG-MODELS OF GEOPHYSICAL PARAMETERS USING MACHINE LEARNING METHODS (GOLA FIELD) Ana Brčković, Jasna Orešković	32

DETERMINING THE FORMATION OF KAOLINITE MINERALIZATION USING MINERALOGICAL ANALYSES IN MOTAJICA GRANITE COMPLEX, BOSNIA AND HERZEGOVINA	33
Tomislav Brenko, Sibila Borojević Šoštarić	
GEOLOGY FOR BLIND AND VISUALLY IMPAIRED	35
Renata Brezinščak, Petra Šparica	
VOLCANIC SOURCES AND SINKS OF THE ALPINE-MEDITERRANEAN REGION: A WINDOW INTO SILICIC VOLCANISM AND PALEOENVIRONMENTS DURING EARLY–MIDDLE MIOCENE	36
Mihovil Brlek, Sean Gaynor, Simon Tapster, Julie Schindlbeck-Belo, Steffen Kutterolf, Nina Trinajstić, Folkmar Hauff, Kuo-Lung Wang, Hao-Yang Lee, Sanja Šuica, Blanca Bauluz, Vlatko Brčić, Ivan Mišur, Duje Kukoč, Svetoslav Georgiev, Giovanni Mongelli, Réka Lukács	
IMPLEMENTATION OF A TI(III) REDUCTION METHOD FOR THE DETERMINATION OF NITROGEN ($\delta^{15}\text{N}$) AND OXYGEN ($\delta^{18}\text{O}$) ISOTOPIIC COMPOSITION OF NITRATE	37
Patricia Buškulić, Laura Bačani, Borna-Ivan Balaž, Zoran Kovač, Jelena Parlov	
CONTROL VARIABLES OF THE WATER GEOCHEMISTRY IN THE RULL CAVE, ALICANTE, SPAIN KONTROLNE	38
María Candela Ruiz, Concepción Pla, Sara Gil-Oncina, Noé García-Martínez, David Benavente	
SUBAERIAL EXPOSURE SURFACE WITHIN CARBONATE DEPOSITS AT ZLATNI RT CAPE, ROVINJ, ISTRIA – A RECORD OF A LATE JURASSIC EMERGENCE OF THE ADRIATIC CARBONATE PLATFORM	39
Blanka Cvetko Tešović, Ivor Perković, Maja Martinuš, Igor Vlahović, Goran Durn	
GAMMA REY SPECTROMETRY ANALYSIS OF PRE-NEOGENE BASEMENT ROCKS AND ITS IMPLICATIONS ON THE RADIOGENIC HEAT GENERATION POTENTIAL	40
Marko Cvetković, Josipa Kapuralić, Ana Brcković, Marija Pejić	
BOARD GAME: JOURNEY THROUGH THE EARTH'S PAST	42
Marina Čančar, Valerije Makarun, Lucija Markotić, Igor Pejnović	
CHARACTERISTICS OF TRANSITIONAL DEPOSITIONAL ENVIRONMENTS ALONG EASTERN ADRIATIC COAST (SOLINE BAY, KRK ISLAND AND QUEEN'S BEACH, NIN)	43
Marina Čančar, Natali Neral, Vlasta Čosović, Željko Ištuk, Štefica Kampić, Igor Felja	
MINERALOGICAL AND GEOCHEMICAL CHARACTERISTICS OF BAUXITES FROM KOŠUTE AND GLJEV, SINJ REGION	44
Andrea Čobić, Karla Štiber, Nenad Tomašić	
GEOLOGICAL DEPOSITS IN THE KAPTOL AREA (ZAGREB CATHEDRAL)	45
Lovro Dragić, Luka Miklin, Marko Boričević	
POTENTIAL FOR IRRIGATION USING GROUNDWATER IN THE AREA OF THE LOWER COURSE OF THE DRAVA AND DANUBE IN THE REPUBLIC OF CROATIA	46
Željko Duić, Ivica Pavičić, Ida Pavlin	
THE ORIGINE AND SHAPES OF TIDAL NOTCHES IN THE KVARNER AREA (CROATIA)	48
Nadia Dunato Pejnović, Čedomir Benac, Kristina Pikelj	
AMMONOID AND CONODONT BIOSTRATIGRAPHY OF AN ENIGMATIC LATE ANISIAN TO LADINIAN RED LIMESTONE SUCCESSION WITH MASS TRANSPORT DEPOSITS IN NORTHERN MONTENEGRO (KOVČEŽI LOCALITY, DURMITOR MTS.)	49
Martin Đaković, Milica Mrdak, Hans-Jürgen Gawlick, Mileva Milić	
COMPARISON OF XRD AND FTIR ANALYSES FOR DETERMINING MINERAL PHASES IN UROLITHIASIS CROSS-SECTIONS	50
Hana Fajković, Željka Fiket, Ibrahim M.J. Mohialdeen, Asaad I. Mustafa, Zhino N. Hussein	
GEOLOGY IN THE 4TH GRADE OF SCIENCE GYMNASIUMS	51
Karmen Fio Firi, Katarina Gobo, Frane Marković, Maja Martinuš, Zorica Petrincec, Kristina Pikelj	
SIMULTANEOUS TRACING TEST WITH THREE DIFFERENT TRACERS IN THE PLITVICE LAKES NATIONAL PARK, CROATIA	52
Tihomir Frangen, Josip Terzić, Ivana Boljat, Jasmina Lukač Reberski, Hrvoje Meaški, Ranko Biondić, Kazimir Miculinić, Nikola Markić, Andrijana Brozinčević, Marina Martinčić, Ana Selak, Hrvoje Burić, Nedeljko Stanić	
NEW CLASSIFICATION OF DISCONTINUITIES ACCORDING TO THE DEGREE OF SPELEOGENESIS	54
Davor Garašić	
POSSIBLE OCCURENCE OF HYPOGENE KARST AND CAVES IN CROATIA	55
Davor Garašić, Mladen Garašić	
OCCURRENCE AND MINERAL CHEMISTRY OF THE TITANIAN CLINOHUMITE FROM MARBLE OF ZOROVAC CREEK, MOSLAVAČKA GORA, CROATIA	57
Vesnica Garašić	
AWARENESS OF MINERAL RESOURCES POTENTIALITY IN THE REPUBLIC OF CROATIA AS INCENTIVE FOR THE GENERAL ECONOMIC GROWTH	59
Nikola Gizdavec, Željko Dedić, Dragan Krasić, Nikolina Ilijanić, Erli Kovačević Galović, Marko Copić, Slobodan Miko	
THE UNITED NATIONS FRAMEWORK CLASSIFICATION EXAMPLES FOR MINERAL RESOURCES IN THE REPUBLIC OF CROATIA	60
Nikola Gizdavec, Slobodan Miko, Erli Kovačević Galović, Marko Copić, Ilijanić Nikolina	
GEOLOGICAL ANALYSIS OF HISTORICAL AERIAL IMAGERY: BRIBIRSKA MOSTINE AREA, CROATIA	62
Nikola Gizdavec, Laszlo Podolszki, Mateo Gašparović, Borna Lužar-Oberiter, Slobodan Miko, Hrvoje Burić	
CALCICLASTIC MASS-TRANSPORT DEPOSITS (MTDs) IN A SHALLOW-MARINE SUCCESSION OF THE DINARIC FORELAND BASIN (NORTHERN DALMATIA, CROATIA)	63
Katarina Gobo, Ervin Mrinjek, Vlasta Čosović, Roko Ramov, Karla Vlatković	
PARTICLE COMPOSITION AND DEPOSITIONAL ENVIRONMENT OF THE KOŠNA CONGLOMERATES (VELEBIT MT., CROATIA)	64
Katarina Gobo, Iva Palatinuš, Karmen Fio Firi, Frane Marković, Jasenka Sremac	
FROM REEF TO BASIN – PROGRADATION OF THE SHALLOW WATER CARBONATES OVER THE MIDDLE TRIASSIC NORTHWESTERN CROATIAN RIFT RELATED BASIN (IVANŠČICA MT., NW CROATIA)	65
Tonči Grgasović, Duje Smirčić, Damir Slovenec, Marija Horvat, Josip Halamić, Matija Vukovski, Duje Kukoč	
SARMATIAN SEDIMENTS OF THE SOUTHWESTERN PART OF THE HRVATSKO ZAGORJE BASIN (HZB), CROATIA	66
Anita Grizelj, Monika Milošević, Valentina Hajek-Tadesse, Koraljka Bakrač, Ines Galović, Tomislav Kurečić, Lara Wacha, Ana Čaić-Janković, Radovan Avanić, Luka Badurina, Branimir Segvić, Mario Matošević	

LANDSLIDE DENSITY FOR NORTH AND EAST CROATIA BASED ON DATA FROM HISTORICAL GEOLOGICAL MAPS	67
Vlatko Gulam, Iris Bostjančić, Tihomir Frangen, Davor Pollak, Ivan Markotić	
SEDIMENTOLOGICAL CHARACTERISTICS OF THE APTIAN–ALBIAN DEPOSITS OF THE KANFANAR QUARRY, ISTRIA	68
Eric Hadžić, Maja Martinuš, Blanka Cvetko Tešović, Igor Vlahović, Ivor Perković, Goran Durn, Marta Mileusnić	
PALAEOENVIRONMENTAL CHANGES IN THE EARLY MIOCENE OF THE PAPUK MOUNTAIN	69
Valentina Hajek-Tadesse, Lara Wacha, Marija Horvat, Ines Galović, Koraljka Bakrač, Anita Grizelj, Oleg Mandic, Bettina Reichenbacher	
GEOLOGICAL MAPPING OF THE CROATIAN ADRIATIC SEAFLOOR WITHIN THE FRAME OF EMODNET GEOLOGY INITIATIVE	71
Ozren Hasan, Slobodan Miko, Dea Brunović, Nikolina Ilijanić, Ivona Ivkić, Natalia Smrkulj	
CUMULATIVE AND COSEISMIC DISPLACEMENTS DERIVED FROM TECTONIC GEOMORPHOLOGY AND GEODESY ANALYSIS ON THE RUPTURED PETRINJA–POKUPSKO FAULT (MW 6.4, 2020, CROATIA)	72
Maxime Henriquet, Lucilla Benedetti, Stéphane Baize, Branko Kordić, Marianne Métois, James Hollingsworth, Cécile Lasserre, Olivier Cavalié, Josipa Maslač, Nikola Belić, Daniela Pantosti, Francesca Cinti, Stefano Pucci, Alessio Testa, Paolo Boncio, Bruno Pace, Petra Jamšek Rupnik, Ryan Gold, Adrien Moulin, Jure Atanackov, Riccardo Civico, Marko Špelić, Matija Vukovski	
PLEISTOCENE FORAMINIFERAL ASSEMBLAGE FROM THE NORTH ADRIATIC, CROATIA	73
Morana Hernitz Kučenjak, Mario Matošević, Goran Mikša	
TESTING THE METHODOLOGY: THE SEVEN-STEP SEQUENTIAL EXTRACTION ANALYSIS OF STREAM SEDIMENTS AFFECTED BY SEDIMENT-HOSTED Cu DEPOSITS	74
Laura Huljek, Hana Fajković, Johan Bang Hilmo, Željka Fiket, Sabina Strmić Palinkaš	
GEOCHEMICAL RECORDS IN CROATIAN KARST BAUXITES – TECTONIC AND CLIMATIC EVENT MARKERS AT REGIONAL UNCONFORMITIES	75
Nokolina Ilijanić, Erli Kovačević Galović, Nikola Gizdavec, Slobodan Miko, Zoran Peh	
IN SEARCH OF THE MOST EFFICIENT METHODS IN “LIBERATING” PLANKTONIC FORAMINIFERA FROM INDURATED LIMESTONES: A CASE STUDY OF EOCENE TRANSITIONAL BEDS (VINODOL VALLEY, CROATIA)	76
Željko Ištuk, Igor Felja, Đurđica Pezelj, Štefica Kampać, Dražen Kurtanjek, Vlasta Čosović, Tamara Tudor, Matej Pavlović, Ivan Jazvac, Marija Horvat	
HOLOCENE STABLE ISOTOPE RECORD IN LAKE SEDIMENTS AND OSTRACODS FROM LAKE VELO BLATO ON THE ISLAND OF PAG (DALMATIA, CROATIA)	78
Ivona Ivkić Filipović, Nikolina Ilijanić, Slobodan Miko, Melanie Leng, Jack Lacey, Tamara Marković	
GEOMORPHOLOGICAL SETTINGS AND TYPES OF LANDSLIDES IN THE CITY OF BUZET IDENTIFIED USING LIDAR DIGITAL TERRAIN MODEL	79
Petra Jagodnik, Sanja Bernat Gazibara, Marko Sinčić, Hrvoje Lukačić, Željko Arbanas, Snježana Mihalić Arbanas	
IDENTIFYING GEOMORPHOLOGICAL UNITS BASED ON LITHOLOGICAL AND GEOMORPHOLOGICAL MAPPING USING LIDAR DIGITAL TERRAIN MODEL: EXAMPLE FROM THE VINODOL VALLEY	80
Petra Jagodnik, Neven Bočić	
DENTAL REMAINS OF THE EXTINCT SHARK PTYCHODUS (ELASMOBRANCHII, PTYCHODONTIDAE) FROM THE UPPER CRETACEOUS OF CROATIA	81
Sanja Japundžić, Manuel Amadori, Jacopo Amalfitano, Patrick L. Jambura, Luca Giusberti, Eliana Fornaciari, Jürgen Kriwet	
PATHOLOGICAL CHANGES ON THE FOSSIL WHALES VERTEBRAE	83
Sanja Japundžić, Marina Đuras, Kim Korpes, Magdalena Kolenc, Zoran Vrbanac, Ivana Marušćak	
SEISMOSTRATIGRAPHY AND TECTONIC STRUCTURE OF THE KVARNER OFFSHORE RESEARCH AREA	84
Ana Kamenski, Tvrtko Korbar	
THE ROLE OF THE GRAVEL PIT LAKES IN REDUCING GROUNDWATER CONTAMINATION WITH NITRATES	86
Igor Karlović, Tamara Marković, Andrew Smith, Antonija Kulaš, Marija Gligora Udovič, Petar Žutinić, Katarina Kajan, Sandi Orlić	
SPATHIAN (LOWER TRIASSIC) CONODONTS FROM THE TULCEA VECHIE QUARRY (NORTH DOBROGEA, ROMANIA)	87
Tea Kolar-Jurkovšek, Chen Yan-Long, Eugen Grădinaru, Bogdan Jurkovšek	
SALTECTA – SALT DIAPYRS AND ACTIVE TECTONICS IN THE CENTRAL ADRIATIC	88
Tvrtko Korbar, Ana Kamenski, Damir Palenik, Snježana Markušić, Dea Brunović, Marko Budić, Tihomir Frangen, Dražen Navratil, Krešimir Petrinjak, Franjo Šumanovac, Lara Wacha	
DEVELOPMENT OF A GEOLOGICAL MODEL OF THE THERMAL SPRING AREA IN DARUVAR USING GEOPHYSICAL RESEARCH	89
Kosović Ivan, Briški Maja, Pavić Mirja, Božo Padovan, Pavičić Ivica, Matoš Bojan, Pola Marco, Borović Staša	
SOIL WATER ISOTOPIC SIGNATURE IN SLOPED VINEYARD, ZAGREB, CROATIA	91
Zoran Kovač, Vedran Krevh, Jasmina Defterdarović, Lana Filipović, Borna-Ivan Balaž, Patricia Buškulić, Vilim Filipović	
CASCADING EFFECTS OF HAZARDS AND THEIR IMPACT ON CRITICAL INFRASTRUCTURE IN THE CROSS-BORDER AREA	92
Meho Saša Kovačević, Mario Bačić, Lovorka Librić, Danijela Jurić Kačunić, Marijan Car, Nicola Rossi	
THE RARE EARTH ELEMENT (REE) POTENTIAL OF CROATIAN KARST BAUXITES	93
Erli Kovačević Galović, Ilijanić Nikolina, Nikola Gizdavec, Slobodan Miko, Zoran Peh	
MIOCENE FACIES CHARACTERIZATION AND DISTRIBUTION, DRAVA-02, PANNONIAN BASIN, CROATIA	94
Krešimir Krizmanić, Tamara Troskot-Čorbić, Morana Hernitz Kučenjak	
CONTINUOUS MONITORING OF THE KOSTANJEK LANDSLIDE AND A TOOL FOR AN EARLY WARNING SYSTEM	96
Martin Krkač, Sanja Bernat Gazibara, Hrvoje Lukačić, Snježana Mihalić Arbanas	
THE EGERIAN-EGGENBURGIAN VOLCANICLASTIC DEPOSITS IN THE SUBSURFACE OF NW CROATIA – NEW INSIGHT INTO SEDIMENTARY BASIN EVOLUTION OF MURA HYDROCARBON PROVINCE (MHCP)	97
Nada Krklec, Dina Zopf, Alan Vranjković, Mario Matošević, Snježana Blažeković Smojić, Tomislav Antolić	
EARLY NEOTETHYAN HISTORY ARCHIVED IN THE OPHIOLITIC MÉLANGE OF NW CROATIA	98
Duje Kukoč, Damir Slovenec, Branimir Šegvić, Matija Vukovski, Mirko Belak, Duje Smirčić	
GROUNDWATER VULNERABILITY ASSESSMENT IN THE VICINITY OF COAL ASH LANDFILLS IN ŠTRMAC (ISTRIA) AND PLAŠKI (LIKA)	99
Jelena Loborec, Sanja Kapelj, Željka Fiket	
SEISMOSTRATIGRAPHIC CHARACTERIZATION OF THE SYN RIFT HALF-GRABEN INFILL, EASTERN PART OF DRAVA DEPRESSION, MIKLEUŠ AREA	101
Ana Majstorović Bušić, Tomislav Baketarić, Alan Vranjković, Nyiri Daniel, Željka Marić-Đureković	

BADENIAN MACROFOSSIL ASSEMBLAGES FROM THE CEPELIŠ LOCALITY (BANOVINA, CROATIA)	102
Valerije Makarun, Oleg Mandić, Karmen Fio Firi, Đurđica Pezelj, Andreas Kroh, Mathias Harzhauser, Marijan Kovačić	
IMPORTANCE OF DOUBLE-DEGREE MASTER PROGRAMME AT UNIZG-RGNF – EUROPEAN INSTITUTE OF INNOVATION & TECHNOLOGY (EIT) LABELLED INNOVATIVE MINERAL EXPLORATION STUDY PROGRAMME	103
Ana Maričić, Sibila Borojević Šoštarić	
DEPOSITIONAL ENVIRONMENTS IN THE NORTHEASTERN PART OF THE NOVIGRAD PIGGYBACK BASIN DURING THE PALEOGENE (KARIN GORNJI, NORTHERN DALMATIA)	104
Lucija Markotić, Katarina Gobo	
HISTORICAL OVERVIEW ON HIGH SCHOOL TEXTBOOKS IN GEOLOGY AND MINERALOGY	105
Frane Marković, Karmen Fio Firi, Katarina Gobo, Katarina Krizmanić, Maja Martinuš, Zorica Petrincec, Kristina Pikelj, Nediljka Prlj Šimić, Ivan Razum	
RECONSTRUCTING THE GROWTH DYNAMICS OF MYTILUS GALLOPROVINCIALIS IN THE EASTERN ADRIATIC SEA USING SHELL GEOCHEMISTRY	106
Krešimir Markulin, Melita Peharda, Hana Uvanović, Bernd R. Schöne, Jasna Arapov, Dario Omanović, Hrvoje Mihanović	
MINERALOGICAL PROPERTIES OF CHERNOZEM AND CHERNOZEM-LIKE SOILS IN EASTERN CROATIA	107
Jasmina Martinčević Lazar, Lidija Galović, Stjepan Husnjak, Ajka Šorša, Nina Hečej	
SUBAERIAL EXPOSURE SURFACES MARKING REGIONAL UNCONFORMITY IN THE UPPER CRETACEOUS TO LOWER PALAEOGENE PLATFORM CARBONATES, THE ISLAND OF BRAČ (CROATIA)	108
Maja Martinuš, Blanka Cvetko Tešović, Ivor Perković, Igor Vlahović	
NEW FINDINGS OF STRAIGHT-TUSKED ELEPHANT (PALAEOLOXODON ANTIQUUS) IN THE AREA OF LOWLAND CROATIA	109
Ivana Marušćak, Andrea Rimpf, Dražen Japundžić	
AN EXAMPLE OF DIGITAL FIELD GEOLOGY DATA INTEGRATION TO STANDARD DESIGN SOFTWARE	110
Davor Marušić	
FIRST PALEOSEISMOLOGICAL STUDY IN CROATIA: PRELIMINARY RESULTS AFTER THE 2020 EARTHQUAKE ON THE PETRINJA–POKUPSKO FAULT	112
Josipa Maslač, Francesca R. Cinti, Daniela Pantosti, Stéphane Baize, Koraljka Bakrač, Anita Grizelj, Lucilla Benedetti, Riccardo Civico, Stefano Pucci, Maxime Henriquet, Radovan Filjak, Nikola Belić, Marko Špelić, Marko Budić, Josip Barbača, Petra Jamšek Rupnik, Marjana Zajc, Lovro Rugar, Ivan Kosović, Alessio Testa, Valentina Hajek Tadesse, Monika Milošević, Marija Bošnjak, Branko Kordić	
STRUCTURAL ARCHITECTURE AND KINEMATIC PROPERTIES OF FAULTS IN SOUTHERN DALMATIA	113
Josipa Maslač, Daria Fricki, Bojan Matoš, Ivica Pavičić, Igor Vlahović	
ANALYSIS OF STRUCTURAL-TEXTURAL PROPERTIES OF CENOZOIC CARBONATE BRECCIA IN AREA OF NP NORTHERN VELEBIT	114
Bojan Matoš, Darko Matešić, Uroš Barudžija, Igor Vlahović, David Rukavina, Dubravka Kljajo, Branimir Šajatović	
NEWLY DISCOVERED DINOSAUR TRACKSITE ON THE ISLAND OF VIS (CROATIA)	116
Aleksandar Mezga, Adriano Banak, Borna Lužar-Oberiter, Alan Moro	
RECONSTRUCTION OF THE PLEISTOCENE AND HOLOCENE SUBMERGED PALAEOENVIRONMENTS OF THE JADRO RIVER (CENTRAL DALMATIA, CROATIA)	118
Slobodan Miko, Ozren Hasan, Nikolina Ilijanić, Ivor Karavanić, Ivan Razum, Dea Brunović, Natalia Smrkulj	
DEVELOPMENT OF OPEN EDUCATIONAL RESOURCES ON PERMANENT MAGNETS AND RARE EARTH ELEMENTS	119
Marta Mileusnić, Sibila Borojević Šoštarić	
STRUCTURAL MODELLING OF WESTERN MARGIN OF MT. PAPUK AND MT. PETROVA GORA: THE CASE STUDIES OF THE DARUVAR AND TOPUSKO HYDROTHERMAL SYSTEMS	120
Morena Mileusnić, Katarina Mišić, Bojan Matoš, Ivica Pavičić, Staša Borović, Marco Pola, Ivan Kosović, Mirja Pavić	
LITHIUM AND BORON IN EFFUSIVES FROM BŪKKALJA VOLCANIC FIELD	122
Magdalena Mirt Tomislav Brenko, Sibila Borojević Šoštarić	
TRACING THE ORIGIN OF LAGO MARE BIOTA: OSTRACODS AND MOLLUSKS FROM THE LATE NEOGENE OF THE SLAVONIAN MOUNTAINS IN THE SOUTHERN PANNONIAN BASIN (NE CROATIA)	124
Katja Mužek, Oleg Mandić, Valentina Hajek Tadesse, Mathias Harzhauser, Marijan Kovačić, Tomislav Kurečić, Đurđica Pezelj	
APPLICATION OF ANALYTICAL METHODS (OM, XRPD, FT-IR, ICP-MS) IN EXAMINATION OF RAW MATERIALS USED FOR POTTERY PRODUCTION	125
Natali Neral, Andreja Kudelić, Ana Maričić	
ESTIMATION OF THE GEOTHERMAL POTENTIAL IN THE VELIKA GORICA EXPLORATION AREA, SAVA DEPRESSION AND KARLOVAC SUBDEPRESSION, CROATIA	126
Kristina Novak Zelenika, Marija Pleić, Barbara Gluhak Popović, Tatjana Durn, Josip Vicelja, Martina Tuschl	
ZRINSKA GORA: NORTHWESTERN MARGIN OF THE SAVA SUTURE ZONE	127
Iva Olić, Borna Lužar-Oberiter, Bojan Matoš, István Dunkl, Tamara Troskot-Čorbić	
EXPLORING THE OXYGEN ISOTOPE VARIABILITY IN PRECIPITATION AS A PRECONDITION FOR PALAEOCLIMATE INTERPRETATIONS	128
Iva Palatinuš, Petra Bajo, Maja Briški, Vlatko Brčić	
INTERACTIVE EXHIBITION/WORKSHOP “GET TO KNOW THE EARTH – LOOK INTO THE MICROSCOPE ” – GEOLOGY AND GEOSCIENCES POPULARIZATION PROGRAM OF THE DEPARTMENT FOR POPULARIZATION OF GEOLOGY AND GEOHERITAGE (CROATIAN GEOLOGICAL SOCIETY)	129
Damir Palenik, Karmen Fio Firi, Morana HERNITZ KUČENJAK, Ana Kamenski	
GEOLOGICAL STRUCTURE AND TECTOGENESIS OF THE CENTRAL PART OF THE ČIČARIJA MT.	130
Damir Palenik, Igor Vlahović, Dubravko Matičec, Ladislav Fuček, Bojan Matoš, Tvrko Korbar	
CHARACTERISTICS OF THE LOFER CYCLICITY IN THE DACHSTENIN DOLOSTONES, HOST OF THE Pb-Zn ORE DEPOSIT ST. JAKOB, MEDVEDNICA MT.	131
Ladislav A. Palinkaš, Željka Fiket, Pia Pleše, Gorana Ernečić, Ana Velić, Matej Dolenc	
RESULTS OF GEOELECTRICAL SOUNDINGS OF LOESS-PALEOSOL SEQUENCE IN ZMAJEVAC, CROATIA	133
Mihajlo Pandurov, Petar Stejić, Rodoljub Gajić, Lidija Galović, Ajka Šorša	
CHEMICAL COMPOSITION OF GROUNDWATER AS AN INDICATOR OF LITHOLOGICAL AND STRUCTURAL RELATIONSHIPS WITHIN THE RECHARGE AREA OF THE RAKOVAC SPRING (ŽUMBERAK MOUNTAINS)	134
Jelena Parlov, Bruno Tomljenović, Kristijan Posavec, Zoran Kovač, Laura Bačani, Duje Smirčić	

HYDROGEOCHEMICAL AND ENVIRONMENTAL ISOTOPE STUDY OF TOPUSKO THERMAL WATERS, CROATIA Mirja Pavić, Maja Briški, Marco Pola, Staša Borović	135
PRELIMINARY MAGNETIC AND GEOCHEMICAL PROPERTIES OF ZAGREB CITY AREA SOILS Josip Peco, Stanislav Frančičković-Bilinski, Sanja Sakan	137
THE USE OF MAGNETIC PARAMETERS IN WILDFIRES RESEARCH – EXAMPLE OF NOVIGRAD 2022. WILDFIRE Josip Peco, Robert Scholger, Stanislav Frančičković-Bilinski, Hana Fajković	138
MEASUREMENTS OF RADON AND THORON ACTIVITY CONCENTRATIONS FOR THE PURPOSE OF DETERMINING MIGRATION POTENTIAL ALONG FAULTS IN THE EASTERN PART OF DRAVA SUBBASIN – PRELIMINARY RESULTS Marija Pejić, Marko Cvetković, David Rukavina, Duje Smirčić, Ana Kamenski, Iva Kolenković Močilac	139
BIOMETRIC CHARACTERISTICS OF PLANKTONIC FORAMINIFERA PSEUDOHASTIGERINA MICRA FROM THE FLYSCH DEPOSITS OF THE ISLAND OF HVAR (DINARIC FORELAND BASIN) Igor Pejnović, Vlasta Čosović	140
GENESIS AND EPIGENETIC EVOLUTION OF THE MINJERA BAUXITES, CROATIA, ISTRIA Ivor Perković, Goran Durn, Darko Matešić, Igor Vlahović, Blanka Cvetko Tešović, Maja Martinuš	141
NON-KARST AREAS IN THE KARST AREA OF CROATIA Lea Petohleb, Nikolina Bakšić-Pavlović, Ivona Žiža, Stjepan Husnjak, Vladimir Kušan	142
THE ROLE OF LOCAL COMMUNITIES IN DOCUMENTING AND PRESERVING EX SITU GEOHERITAGE: AN EXAMPLE FROM THE CITY MUSEUM OF ČAZMA Zorica Petrinec, Frane Marković, Maja Cepetić Rogić, Ivan Razum, Ivana Čanađija, Jadranka Kruljac Sever, Marina Junger	143
BIOSTRATIGRAPHIC ANALYSIS OF ISTRIAN FLYSCH: VALIDATING THE MIDDLE EOCENE AGE Krešimir Petrinjak, Stjepan Čorić, Vlasta Premec-Fuček, Jelena Španiček, Stanislav Bergant	144
THE IMPORTANCE OF PRECISE EARTHQUAKE HYPOCENTER LOCATION FOR GEODYNAMIC ANALYSIS OF THE STUDIED AREA Mateo Petrović, Snježana Markušić	145
CHEMICAL COMPOSITION OF MINERAL AND THERMAL WATER OF SERBIAN-CRYSTALLINE CORE REGION Tanja Petrović Pantić	146
PREVIEW OF CREATING HYDROGEOLOGICAL MAP 1:100.000 ON THE TERRITORY OF SERBIA WITH THE RESULTS FROM THE SHEET SMEDEREVO Tanja Petrović Pantić, Milan Tomić, Mihajlo Mandić	147
THE ROLE OF SEAGRASSES IN SEDIMENT ACCUMULATION AND BEACH PROTECTION AGAINST EROSION ON CROATIAN BEACHES Kristina Pikelj, Petra Godec, Iva Vrabac, Martina Petrinjak, Blanka Cvetko Tešović, Maja Martinuš, Stipe Muslim	148
ASSESSMENT OF CONTAMINATION OF RECENT FLUVIAL SEDIMENTS BY COMPARISON WITH EARTHQUAKE-INDUCED SAND BOILS Kristina Pikelj, Mavro Lučić, Tin Lukačević, Irena Ciglencečki-Jušić, Neda Vdović	150
PRELIMINARY TERRAIN AND LANDSLIDE ROUGHNESS ANALYSIS BASED ON LIDAR DERIVED DATA IN THE KUTINA AREA Davor Pollak, Nina Hećej	151
INSTALLATION OF A WEATHER STATION AT POKLEK, MT. ŽUMBERAČKA GORA, IN ORDER TO MONITOR AND ANALYSE PRECIPITATION ON CATCHMENT AREA OF THE RAKOVAC SPRING Kristijan Posavec, Jelena Parlov, Zoran Kovač, Laura Bačani, Borna Ivan Balaž	152
GEOPARK BOKOVO–IMOTSKI LAKES – “A PLACE BORN OF CRYSTAL-CLEAN WATERS AND TOWERING ROCKS” Ksenija Protrka, Hrvoje Škrabić, Ivana Čapin, Luka Kolovrat, Damir Pocrnić	153
APPLICATION OF GEOCHEMICAL FACTORS TO ASSESSMENT OF POTENTIALLY TOXIC ELEMENTS CONTAMINATION IN ALLUVIAL SOILS Niko Radonić, Tomislav Brenko, Martina Puljko, Stanko Ružičić	154
APPLICATION OF MATCHING PURSUIT FOURIER INTERPOLATION FOR MERGING 3D SEISMIC DATA OF DIFFERENT VINTAGES Marijana Radovčić, Ivana Žanić	155
RARE EARTH ELEMENTS IN BAUXITE DEPOSITS IN THE DINARIC REGION; THE POTENTIAL OF MONTENEGRO AND CROATIA Slobodan Radusinović, Nikolina Ilijanić, Mia Jovanović, Zoran Peh, Slobodan Miko, Božica Jovanović, Darko Božović, Nikola Gizdavec	156
SEISMOSTRATIGRAPHIC INTERPRETATION OF THE MESOZOIC SUCCESSION IN THE AREA OF PALAGRUŽA AND MLJET ISLAND WITH A REFERENCE TO THE PETROLEUM POTENTIAL Izabel Maria Rajšel, David Rukavina, Bruno Saftić, Iva Kolenković Močilac, Marko Cvetković	158
RECENT KNOWLEDGE ABOUT THE KARST SPRING MILJACKA IN THE KRKA BASIN Josip Rubinić, Milan Mihovilović, Želimir Pekaš, Neven Cukrov, Radišić Maja, Marin Milin, Helena Radeljak	159
SEQUENCE STRATIGRAPHIC INTERPRETATION OF THE PLIOCENE TO RECENT INFILL IN THE SOUTHERN PART OF THE ADRIATIC FORELAND SYSTEM David Rukavina, Bruno Saftić, Iva Kolenković Močilac, Marko Cvetković	160
MAPPING OF THE SYN-RIFT INFILL AND TECTONIC CONTROL ON THE RESERVOIR DISTRIBUTION: EXAMPLE FROM THE DRAVA BASIN, PANNONIAN BASIN SYSTEM David Rukavina, Bruno Saftić, Iva Kolenković Močilac, Marko Cvetković	161
ROCK PROPERTIES MODELLING ON SELECTED WELLS IN NORTH-WESTERN CROATIA Tihana Ružić, Dina Zopf, Toma Molnar, Domagoj Vukadin, Suzana Kovačević Rogulić, Alan Vranjković	162
THE SITE HUŠNJAKOVO – AN EXAMPLE OF THE INFLUENCE OF THE CLIMATE CHANGES ON THE GEOLOGICAL HERITAGE Jurica Sabol	163
REPRESENTATIVES OF THE ELPHIDIIDAE FAMILY FROM BUKOVA GLAVA LOCALITY (NAŠICE) Jurica Sabol, Đurđica Pezelj	164
POLYMORPH-BEARING MELT INCLUSIONS IN MAGMATIC ZIRCON FROM SLAVONIAN MTS. Petra Schneider, Dražen Balen	165
OCCURRENCE OF EMERGING ORGANIC CONTAMINANTS IN DINARIC KARST CATCHMENT OF JADRO AND ŽRNOVNICA SPRINGS, CROATIA Ana Selak, Jasmina Lukač Reberski, Goran Klobučar, Tomislav Novosel, Marina Filipović, Ivana Boljat, Josip Terzić	166

PALYNOLOGICAL CHARACTERISTICS OF THE QUATERNARY DEPOSITS FROM THE KRALJEV VRH SECTION (CROATIA) Olena Sirenko, Koraljka Bakrač, Tomislav Kurečić, Anita Grizelj	167
MIDDLE TRIASSIC CALC-ALKALINE BASALTS AND ANDESITES OF IVANŠČICA AND STRAHINJŠČICA MTS. (NW CROATIA): MINERALOGY, PETROLOGY AND TECTONO-MAGMATIC SETTING OF FORMATION Damir Slovenec, Mirko Belak, Duje Smirčić, Marija Horvat, Branimir Šegvić, Duje Kukoč, Tonči Grgasović, Matija Vukovski	168
MID-TRIASSIC VOLCANO-SEDIMENTARY SUCCESSIONS OF NW CROATIA – IMPLICATIONS FOR THE EARLY EVOLUTION OF THE ADRIATIC MARGIN Duje Smirčić, Duje Kukoč, Damir Slovenec, Tonči Grgasović, Matija Vukovski, Marija Horvat, Mirko Belak, Branimir Šegvić	170
CORRELATION OF THE MIDDLE TRIASSIC SEDIMENTARY FACIES WITH ITS DISTRIBUTION IN THE SYN-RIFT STRUCTURES DETERMINED BY 2D SEISMIC DATA – AN EXAMPLE FROM THE EXTERNAL DINARIDES AND NORTHERN ADRIATIC Duje Smirčić, David Rukavina, Dunja Aljinović, Uroš Barudžija, Vesnica Garašić	171
NEW MULTI-PROXY EVIDENCE OF HOLOCENE ENVIRONMENTAL AND HYDROLOGIC CHANGES FROM SEDIMENTARY INFILL OF PROKLJAN LAKE (KRKA RIVER, CROATIA) Natalia Smrkulj, Ozren Hasan, Dea Brunović, Slobodan Miko, Jyh-Jaan Steven Huang, Nikolina Ilijanić, Marcel Ortler, Martina Šparica Miko, Petra Hus	172
RECONSTRUCTION OF THE POST-EOCENE MORPHOLOGY OF THE BOTTOM OF THE VRGORAC LAKE BASED ON GEOPHYSICAL DATA Petar Stejić, Rodoljub Gajić, Mihajlo Pandurov, Lidija Galović, Ajka Šorša, Nina Hečej, Koen Beerten, Jasmina Martinčević Lazar	173
SEAFLOOR MASSIVE SULFIDE DEPOSITS ON THE ARCTIC MID-OCEAN RIDGES: AN INSIGHT INTO ORE-FORMING PROCESSES ALONG ULTRASLOW SPREADING RIDGES Sabina Strmić Palinkaš, Rolf B. Pedersen, Fredrik Sahlström, Marie Wold, Eszter Sendula	174
STABLE ISOTOPES AND TRITIUM: FROM PRECIPITATION TO SPRING WATER, A CASE STUDY OF LIČKA JESENICA Andrej Stroj, Maja Briški, Petra Bajo	176
SILENT GEOHAZARD – RADON IN MODRIČ SHOW CAVE Maša Surić, Vanja Radolić, Robert Lončarić, Igor Miklavčić	177
THE PALEONTOLOGICAL SIGNIFICANCE OF THE MIDDLE TRIASSIC BASINAL DEPOSITS OF THE SAMOBOR AND ŽUMBERAK MTS. Robert Šamarija, Fran Vidaković, Dražen Japundžić	178
TAPHONOMIC ANALYSIS OF SKELETAL REMAINS OF ALPINE MARMOT (<i>MARMOTA MARMOTA</i>) FROM THE LATE PLEISTOCENE DEPOSITS OF THE PEČINE U BRINI CAVES NEAR DRNIŠ Rahela Šanjek, Ankica Oros Sršen	180
IN PURSUIT OF PALINOMORPHS IN THE EARLY CRETACEOUS DEPOSITS OF THE BRIJUNI ARCHIPELAGO (CROATIA) Nikolina Šestak, Karmen Fio Firi, Olena Shevchuk, Viktoria Baranyi, Koraljka Bakrač	181
THE KOLOČEP CHANNEL – LATE QUATERNARY EVOLUTION OF A SUBMERGED KARST BASIN Dragana Šolaja, Slobodan Miko, George Papatheodorou, Ozren Hasan, Nikolina Ilijanić	182
INTEGRATED STRATIGRAPHY OF APTIAN BARJAŠKA FORMATION ON THE ISLAND OF VIS (ADRIATIC SEA, CROATIA) Jelena Španiček, Tvrtko Korbar, Ladislav Fuček, Thomas Steuber	182
GEOTHERMAL POTENTIAL OF THE CITY OF SISAK Neven Šuica, Željka Sladović, Goran Groš	184
THE EGERIAN TUFFS FROM THE HRVATSKO ZAGORJE BASIN Sanja Šuica, Mihovil Brlek, Nina Trinajstić, Simon Richard Tapster, Julie Schindlbeck-Belo, Steffen Kutterolf, Ivan Mišur, Duje Kukoč, Vlatko Brčić, Radovan Avanić	185
GEOLOGICAL INTERPRETATION OF MAGNETOTELLURIC DATA IN THE EXPLORATION BLOCK DINARIDI-14 Damir Takač, Tamara Troškot-Čorbić, Davorin Balić, Goran Mikša	186
HYDROGEOLOGICAL, GEOCHEMICAL, AND HYDROGEOCHEMICAL CHARACTERISTICS OF AN ISLAND'S KARST AQUIFER. BLATSKO POLJE ON THE KORČULA ISLAND Josip Terzić, Jasmina Lukač Reberski, Ivana Boljat, Ozren Hasan, Martina Šparica Miko, Ana Selak	187
SOURCE ROCK AND HYDROCARBON EVALUATION AND CORRELATION, DRAVA-03, CROATIA Tamara Troškot-Čorbić	188
HYDROGEOLOGICAL AND GEOLOGICAL INTERPRETATION ANALYSIS OF CORE SAMPLES FROM WELLS CARRIED OUT AS PART OF THE NATURA VITA PROJECT Kosta Urumović, Lara Wacha, Marco Pola, Anita Grizelj, Koraljka Bakrač, Martina Šparica Miko	189
3D SEISMO-SEDIMENTOLOGICAL CHARACTERIZATION OF NEOGENE MURA BASIN SUCCESSION (PANNONIAN BASIN SYSTEM, CROATIA) Alan Vranjković, Nada Krklec, Tomislav Baketarić, Dina Zopf, Mario Matošević, Tihana Ružić, Suzana Kovačević Rogulić, Tomislav Antolić, Ana Majstorović Bušić, Goran Jović	190
NORTH ADRIATIC SANDSTONE RESERVOIR CHARACTERIZATION USING MACHINE LEARNING Domagoj Vukadin, Renata Vidaček	191
ROLE OF ALPINE AND DINARIC TECTONIC EVENTS IN THE TRANSITIONAL AREA OF THE SOUTHERN ALPS AND THE INTERNAL DINARIDES – KINEMATIC INFERENCES FROM IVANŠČICA MOUNTAIN (NORTHERN CROATIA) Matija Vukovski, Bruno Tomljenović, Tonči Grgasović, Duje Kukoč, Damir Slovenec	192
DISTRIBUTION OF LOWER MIOCENE VOLCANICLASTIC ROCKS IN THE MURA BASIN ACCORDING TO WELL AND SEISMIC DATA Dina Zopf, Nada Krklec, Alan Vranjković, Mario Matošević	194
WHEN THE STARS CONNECT – GEOLOGICAL MAPPING AND GEODIVERSITY INVENTORY Gordana Zwicker Kompar, Vlatko Brčić, Kazimir Miculinić, Irina Žeger Pleše, Adrijana Brozičević, Nikola Markić	195
DEPTH MIGRATION OF SEISMIC VOLUMEN VIROVITICA SOUTH 3D Ivana Žanić, Marijana Radovčić	197
THE ADVENTURE OF PROTECTING DINOSAUR FOSSILS Irina Žeger Pleše, Aleksandar Mezga, Gordana Zwicker Kompar, Danijela Bokarica, Andrea Deklić	198

Responsibility for the content within the field-guide lies entirely within the authors.
Authors are also responsible for the provided addresses and affiliation information.

poroznosti i naoko vidljivih detritalnih primjesa koji bi kompromitirali rezultate U-Th datiranja. Po jedan uzorak iz najstarijih dijelova preostale dvije jezgre je izdvojen za datiranje. Uzorci karbonata datirani su U-Th metodom koristeći Neptune Plus MC-ICP-MS na Johannes Gutenberg Sveučilištu u Mainz.

Rezultati datiranja dva odabrana uzorka pokazuju njihovu starost od 129,5 (+/- 0,61) ka BP odnosno čak 644,1 (+93,2/-53,1) ka BP. Ovi rezultati pokazuju da je glavni kanal Gornje Baraćeve špilje vrlo vjerojatno stariji od 644 ka BP, ali rezultate treba uzeti s oprezom s obzirom da su na samoj granici datiranja U-Th metodom.

S obzirom da prilikom uzorkovanja nije mogao biti dosegnut najniži (najstariji) dio sigastog stupa te da postoji mogućnost da ovo i nije najstarija siga, starost ovog kanala vjerojatno je i veća. To ukazuje da je podzemno otjecanje tamo bilo razvijeno već na prijelazu iz ranog u srednji pleistocen. S obzirom na položaj datiranih siga u kanalu, s velikom vjerojatnošću se može pretpostaviti da je u vrijeme njihovog nastanka kanal već bio potpuno neaktivan. To znači da je tijekom srednjeg pleistocena voda već tekla kroz niže provodnike, vjerojatno današnju Donju Baraćeve špilju. Dobiveni rezultati trenutno predstavljaju podatke o najstarijoj datiranoj sigi u kršu Hrvatske.

CZUPPON, G., BOČIĆ, N., BUZJAK, N., ÓVÁRI, M., MOLNÁR, M. (2018): Monitoring in the Barac and Lower Cerovačka caves (Croatia) as a basis for the characterization of the climatological and hydrological processes that control speleothem formation. *Quaternary International*, 494, 52–65. DOI: 10.1016/j.quaint.2018.02.003.

KOVAČEVIĆ, T. (2003): Baraćeve špilje. Turistička zajednica Općine Rakovica, Rakovica.

VELIĆ, I., VLAHOVIĆ, I. (ur.) (2009): Tumač Geološke karte Republike Hrvatske 1: 300.000 Hrvatski geološki institut, Zagreb. Croatian Geological Survey, Zagreb, 141 str.

CEEPUS NETWORK CIII-RS-0038: RECOGNITION OF CHALLENGES IN GEOLOGICAL EDUCATION IN SOUTH-EASTERN EUROPE AND PROMPT RESPONDS

CEEPUS MREŽA CIII-RS-0038: PREPOZNAVANJE IZAZOVA U OBRAZOVANJU GEOLOŠKIH STRUKA U JUGOISTOČNOG EUROPI I MOGUĆA RJEŠENJA

Sibila Borojević Šoštarić^{1*}, Kristina Šarić²

¹University of Zagreb, Faculty of Mining, Geology and Petroleum Engineering, Pierottijeva 6, 10 000 Zagreb, Croatia

²University of Belgrade, Faculty of Mining and Geology, Đušina 7, 11 000 Belgrade, Serbia

*corresponding author: sibila.borojevic-sostaric@rgn.unizg.hr

Keywords: *CEEPUS, geological education, South-Eastern Europe*

Geological education at South-Eastern European universities is developed under the CEEPUS CIII-RS-0038 network (Earth-Science Studies in Central and South-Eastern Europe – EURO Geo-Sci), which includes participating unites from eleven countries: Albania, Austria, Bosnia and Herzegovina, Croatia, Czech Republic, Hungary, Poland, Romania, Serbia, Slovakia and Slovenia. For long 24 years, EURO Geo-Sci continuously promotes sharing of knowledge and know-how via multilevel activities: student mobility, engagement of visiting peer-experts, joint supervision Master and PhD thesis, reinforcing geosciences educational infrastructure of the participating institutions. The network covers wide spectrum of geological disciplines including both fundamental (regional geology, mineralogy, crystallography, geochemistry, petrology, paleontology, structural geology etc) and applied disciplines (e.g. mineral resources, engineering geology, hydrogeology and geophysics). In the past 24 years more

than 1500 individuals used the network through student and teacher mobilities, joint supervision master and PhD projects (successfully defended more than 20) as well as field excursions.

During such a long period, the network is also continuously facing with many internal and external challenges. Internal challenges are related to low-funded, classical and sometimes outdated curricula of some programmes, lack of innovative content and teaching diversity brought by visiting experts and hands-on practical experience for peer academicians as well as for the students. External challenges are related to declining demographic trends and regional brain drain leading to decreasing in number of students, pandemic, unstable political situation (wars) as well as negative public perception of the geology (and mining) sector due to environmental and political activism. Thanks to flexibility of the network and dedicated engagement of the local coordinators, the network responds appropriately to the challenges involving new

courses, networking with current scientific projects, cooperation with industry and serving the society in solving problems concerning pollution, water resources, land sliding, earthquakes, mineral deposits and many others.

For more details about EURO Geo-Sci the following publications are recommended: ŠARIĆ (2022), ŠARIĆ

et al. (2022), ŠARIĆ & IONESCU (2018), as well as the network's website: <https://ceepus.rgf.bg.ac.rs/>, facebook page: Ceeplus.RS0038 and instagram page: ceepus.rs0038.euro_geosci.

ŠARIĆ, K. (2022): 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. 18. Serbian Geological Congress "Geology solves the problems", June 1-4, 2022, Divčibare, Book of Abstracts, 228-229.

ŠARIĆ, K., FOCIRO, A., WAGREICH, M., ORTHER, H., HAGKE, V., CH., GAWLICK, H.-J., GERSLOVA, E., TIBIJAŠ, D., KAZMER, M., BUJTOR, L., BURDA, J., MACHANIEC, E., TROJANOWSKA OLICHWER, A., GAL, A., TIBULEAC, P., GALE, L., FRIDRICOVA, J., DURISKA, I. (2022): CEEPUS Network CIII-RS-0038:

improving geological education to better serving the society. *Geologica Balcanica* 100th Anniversary of the Carpathian-Balkan Geological Association, XII International Congress of the Carpathian-Balkan Geological Association (CBGA), 250, Bulgarian Academy of Sciences Sofia.

ŠARIĆ, K., IONESCU, C. (2018): The CEEPUS network "Earth-Science Studies in Central and South-Eastern Europe" – nineteen years of challenges and success. XXI International Congress of the Carpathian Balkan Geological Association (CBGA), Salzburg, September 10-13, 2018, Neubauer, F., Brendel, U., Friedl, G., (eds.): *Geologica Balcanica*, Abstract Volume, 388 p.

DEEPWATER-CE: DEVELOPMENT OF AN INTEGRATED IMPLEMENTATION FRAMEWORK FOR MANAGED AQUIFER RECHARGE SOLUTIONS TO FACILITATE THE PROTECTION OF CENTRAL EUROPEAN WATER RESOURCES ENDANGERED BY CLIMATE CHANGE AND USER CONFLICT

DEEPWATER-CE: RAZVOJ INTEGRIRANOG OKVIRA ZA PROVEDBU KONCEPTA UMJETNOG PRIHRANJIVANJA VODONOSNIKA SA CILJEM ZAŠTITE RESURSA PITKE VODE UGROŽENIH KLIMATSKIM PROMJENAMA I SUKOBIMA KORISNIKA U SREDNJOJ EUROPI

Staša Borović¹*, Matko Patekar¹, Josip Terzić¹, Marco Pola¹, Ivan Kosović¹, Maja Briški¹

¹ Hrvatski geološki institut, Sachsova 2, 10 000 Zagreb, Hrvatska

*dopisni autor: sborovic@hgi-cgs.hr

Ključne riječi: *umjetno prihranjivanje vodonosnika, otočki krški vodonosnik, Vis, Hrvatska*

Projekt DEEPWATER-CE provodio se u razdoblju od svibnja 2019. do travnja 2022. sa ciljem razvoja integriranog okvira za provedbu umjetnog prihranjivanja vodonosnika (eng. managed aquifer recharge – MAR). MAR je važan mehanizam održivog upravljanja vodnim resursima, posebice u područjima gdje je kakvoća ili dostupnost vode ugrožena, a temelji se na prikupljanju oborinskih i površinskih voda tijekom vlažnih perioda, njihovom skladištenju (npr. akumulacije) te umjetnom prihranjivanju (npr. utisni zdenci ili infiltracijske zone) u vodonosnik. Projekt je bio sufinanciran iz programa transnacionalne suradnje Interreg Srednja Europa 2014.

– 2020., a uključivao je sedam projektnih partnera iz Mađarske, Njemačke, Poljske, Slovačke i Hrvatske.

U sklopu projekta provedena su interdisciplinarna istraživanja sa ciljem lociranja područja i vodonosnika pogodnih za primjenu metoda umjetnog prihranjivanja. Hrvatsko područje istraživanja bio je otok Vis, koji je, zahvaljujući kvalitetnim krškim vodonosnicima, samodostatan po pitanju vodoopskrbe.

Terenska istraživanja na otoku Visu uključivala su kontinuirana i periodička opažanja, te laboratorijska i raznovrsna terenska istraživanja. Kontinuirano su automatskim mjeračima opažani razina podzemnih voda, temperature i elektrolitičke vodljivosti. Periodička mjesečna opažanja obuhvaćala su razine podzemnih voda i *in*