



# ДГКМ

ДРУШТВО НА  
ГРАДЕЖНИ  
КОНСТРУКТОРИ НА  
МАКЕДОНИЈА

# MASE

MACEDONIAN  
ASSOCIATION OF  
STRUCTURAL  
ENGINEERS

# 18

МЕЃУНАРОДЕН СИМПОЗИУМ  
INTERNATIONAL SYMPOSIUM

ОХРИД  
OHRID  
2 - 5 октомври 2019  
October, 2<sup>nd</sup> - 5<sup>th</sup>, 2019



## PROGRAMME

Wednesday, 2.10.2019

09<sup>00</sup>-11<sup>00</sup> Registration

11<sup>00</sup>-12<sup>00</sup> **Opening ceremony**

12<sup>00</sup>-13<sup>00</sup> Welcome Reception

13<sup>00</sup>-14<sup>00</sup> Invited speakers

IP-9 **ZNIDARIC Ales**

NOVEL METHODS OF MONITORING CONDITION AND TRAFFIC LOAD EFFECTS OF BRIDGES

IP-2 **HAJDIN Rade**

EXISTING BRIDGES - BURDEN OR OPPORTUNITY?

14<sup>00</sup>-14<sup>45</sup> Plenary session

**MASE Awards, design and construction**

MA-1 **TODOROVSKI Goran, STOJCEVSKI Nikola, SERAFIMOVSKI Andrea**

CONSTRUCTION OF THE ROOF AND FACADES OF THE NEW MACEDONIAN PHILHARMONIC BUILDING IN SKOPJE

MA-2 **DENKOVSKI Damjan, JOSIMOVSKI Boban, LAZAROVSKI Dimitar**

BASIC DESIGN FOR COMMERCIAL BUILDING - AUTO SALON VOLVO IN SKOPJE

MA-3 **STANKOVA Elena, HRISTOV Boban, PANEV Canko, MANAILOVA-STOJANOVSKA Tatjana**

STRUCTURAL STRAIGHTENING AND REPAIR OF BRIDGE NO.1 ON RIVER VARDAR ON ROAD R1105, DAVIDOVO –UDOVO

14<sup>45</sup>-16<sup>00</sup> LUNCH time

16<sup>00</sup>-17<sup>00</sup> Invited speakers

Chair: Gjorgje LAGJINOVIC and Goran MARKOVSKI

IP-5 **POPOVIC Predrag L.**

AVOIDING MISTAKES DURING ASSESSMENT, DESIGN AND CONSTRUCTION OF STRUCTURAL REPAIRS

IP-6 **RADONJANIN Vlastimir, KOVACEVIC Dusan, MALESEV Mirjana, LAGJINOVIC Gjorgje**

MONITORING SYSTEM AS A PART OF RAILWAY-ROAD BRIDGE LOAD TEST

17<sup>00</sup>-18<sup>30</sup> Parallel Session 1: Construction, Monitoring, Assessment and Repair of RC Bridges

Chair: Gjorgje LAGJINOVIC and Goran MARKOVSKI

MT-18 **IGNJATOVIC Ivan, CAREVIC Vedran, DOCEVSKA Marija, MARKOVSKI Goran**

DURABILITY ANALYSIS OF THE BRIDGE B7 ON THE RAILWAY LINE BITOLA-KREMENICA

MT-11 **DOCEVSKA Marija, BARON A. Edward, MATOS C. Jose, MARKOVSKI Goran**

APPLICATION OF QUALITY CONTROL PLAN TO EXISTING BRIDGES

MT-20 **MARKOVSKI Goran, ARANGJELOVSKI Toni, NAKOV Darko, DOCEVSKA Marija, STOJKOSKA Evgenija, JANEV Dejan**

PROOF LOADING TEST OF STRENGTHENED REINFORCED CONCRETE ARCH BRIDGE

CS-2 **DIMITROVA Ivana**

VIADUCT CONSTRUCTION METHODOLOGY USING BALANCED CANTILEVER SCAFFOLDING

MT-8 **CRAWFORD Kenneth C.**

EVALUATING LONG-TERM BOND DURABILITY OF FRP-SYSTEMS APPLIED TO RC HIGHWAY BRIDGES

CS-8 **JANEV Dejan, ARANGELOVSKI Toni, NAKOV Darko, MARKOVSKI Goran**

METHODS FOR DETERMINATION OF THE DAF FROM MOVING LOADS ON RC BRIDGES

17<sup>00</sup>-18<sup>30</sup> Parallel Session 2: Construction, Monitoring, Assessment and Repair of Steel-Concrete Composite Structures

Chair: Petar CVETANOVSKI and Zoran RAKICEVIC

MT-15 **GEORGIEV Lazar, IVANOV Stoyan**

PRESENT STATUS OF TWO ORTHOTROPIC STEEL DECK BRIDGES ALONG HEMUS HIGHWAY IN BULGARIA

NA-8 **KAZAKOV Kostadin, MIHOVA Lena, PARTOV Doncho**

FINITE ELEMENT MODELLING OF THE ROAD BURIED ARCH BRIDGE "TRI VODICI" IN BULGARIA

SS-13 **PARTOV Doncho, GEORGIEV Lazar, IVANOV Stoyan, NIKOLIC Radoslav**

35 YEARS HISTORY OF ONE UNPREDICTABLE INCIDENT WITH STEEL-CONCRETE COMPOSITE BRIDGE IN BULGARIA

SS-3 **GEORGIEV Lazar**

ANALYSIS OF PARTICULAR STEEL AND CONCRETE COMPOSITE BRIDGES IN REPUBLIC BULGARIA

MT-19 **LIOLIOS Asterios, HATZIGEORGIOU G., LIOLIOS K., PARTOV D., FOLIC B.**

A COMPUTATIONAL ANALYSIS OF OLD RC STRUCTURES STRENGTHENED BY TIES UNDER REMOVAL OF MEMBERS

MT-25 **PARTOV Doncho, IVANCHEV Ivan, TRAYKOVA Marina**

SEISMIC ASSESSMENT OF A STORAGE HERITAGE BUILDING - A CASE STUDY

18 <sup>30</sup> -18 <sup>45</sup>	Coffee break
18 <sup>45</sup> -19 <sup>30</sup>	<b>Poster session 1</b>
CS-1	<b>CHUBRINOVSKA Aleksandra, GEGOVSKI Dejan, KOCEVA Sofija, JANEV Dejan, NAKOV Darko, ARANGJELOVSKI Toni</b> PROOF LOAD TESTING OF THE BRIDGES B1 AND B5 ON HIGHWAY SECTION DEMIR KAPIJA-SMOKVICA
CS-10	<b>JIPONOV Alexander</b> FRAME STRUCTURES FOR RAILWAY VIADUCTS - SOLUTION WHICH GUARANTEE DURABILITY AND SAFETY EXPLOITATION
CS-13	<b>MANOJLOVIC Dragan, MISULIC KOCETOV Tatjana</b> PARAMETRIC STUDY OF DESIGN PARAMETERS IN TIMBER-CONCRETE COMPOSITE BEAMS
CS-14	<b>PLLANA Fatos, SALIHU Fidan, CVETKOVSKA Meri</b> FIRE RESISTANCE ANALYSIS OF REINFORCED CONCRETE SLABS
CS-15	<b>RISTIC Jovan, MLADENOVIC Biljana, BLAGOJEVIC Predrag, ZIVKOVIC Lazar</b> OPTIMAL DIMENSIONING OF RECTANGULAR CROSS SECTIONS EXPOSED TO BENDING IN ACCORDANCE WITH EC2
CS-16	<b>RUSHITI Almir, CVETKOVSKA Meri</b> NUMERICAL ANALYSIS ON FIRE RESISTANCE OF RC BEAMS WITH DIFFERENT CROSS SECTION DIMENSIONS
CS-17	<b>STOJKOSKA Evgenija, DOCEVSKA Marija, NAKOV Darko, ARANGJELOVSKI Toni, MARKOVSKI Goran</b> EXPERIMENTAL AND ANALYTICAL ANALYSIS OF RC ELEMENTS SUBJECTED TO LONG – TERM SUSTAINED LOAD
CS-18	<b>STOYNOVA Iliana, HRISTOV Tsvetomir</b> COMPARATIVE ANALYSIS BETWEEN BY CLASSIC SOLUTIONS METHODS OF FLAT SLAB AND NUMERICAL SOLUTIONS. VERIFICATION OF FINITE ELEMENTS
CS-19	<b>STOYNOVA Iliana, HRISTOV Tsvetomir</b> RESPONSE OF REINFORCED CONCRETE FLAT SLAB SUBJECTED TO IMPULSE IMPACT LOADS
CS-20	<b>SULOODJA Bulent, ABAZI Sead</b> ADVANTAGES AND DISADVANTAGES OF TECHNIC SHOTCRETE
CS-21	<b>VOLCHEV Riste, POSTOLOV Nikola, CVETKOVSKA Meri, CHIFLIGANEC Cvetanka</b> FIRE RESISTANCE OF RC BEAMS EXPOSED TO DIFFERENT FIRE MODELS
CS-5	<b>IAKIMOV Momtchil, IAKIMOV Ivan</b> APPLICATION OF INTEGRAL BRIDGES
CS-7	<b>JAKUPI Enis, ADEMI Festim, ZEJNELI Shinasi</b> ANALYSIS OF CONSTRUCTION ELEMENTS OF TWO-SPAN HALL FROM ECONOMICAL ASPECT (WHICH IS BETTER AND CHEAPER, CONCRETE OR STEEL)
CS-9	<b>JANKOVIC Ksenija, BOJOVIC Dragan, LONCAR Ljiljana, STOJANOVIC Marko, ARANDJELOVIC ANTIC Lana</b> THE INFLUENCE OF THE METHOD OF SPECIMEN PREPARATION ON THE DEPTH OF WATER PENETRATION UNDER PRESSURE
MT-1	<b>BOGDANOVSKI Zlatko, SRBINOSKI Zlatko, KASAPOVSKI Filip, GEGOVSKI Tome</b> GEODETIC DEFORMATION MEASUREMENTS ON „SRBINOVO BRIDGE” - GOSTIVAR
MT-10	<b>DAMJANOVSKI Vladimir, POPOVSKI Denis, PARTIKOV Mile</b> REHABILITATION OF EARTHQUAKE DAMAGED REINFORCED CONCRETE STAIRS
MT-14	<b>FOLIC Radomir, ZENUNOVIC Damir, STOJKOVIC Nenad</b> DURABILITY AND SERVICE LIFE PREDICTION OF CONCRETE STRUCTURES
MT-21	<b>MICEVSKI Stefan, CHURILOV Sergey, DUMOVA-JOVANOSKA Elena</b> FOR ESTIMATION OF MODAL PARAMETERS OF EXISTING STRUCTURES
MT-23	<b>MISKOVIC Zoran, POPOVIC Marko, MISKOVIC Ljiljana</b> SHORT-TERM MONITORING OF TURBINE SUPPORTING STRUCTURE IN AMBIENT AND IN-OPERATION CONDITIONS
MT-26	<b>PETROVIC Zarko, MILOSEVIC Bojan, RANKOVIC Slobodan, MIJALKOVIC Marina</b> STRENGTHENING OF RC CONTINUOUS BEAMS USING CARBON FIBER REINFORCED POLYMER (CFRP) MATERIALS
MT-27	<b>POPOSKA Angela, MANOJLOVSKI Filip, SHOKLAROVSKI Antonio, KRSTEVSKA Lidija, BOGDANOVIC Aleksandra, NAUMOVSKI Nikola</b> AMBIENT VIBRATION TESTING OF IRREGULAR MASONRY STRUCTURE AS AN INITIAL STEP FOR ITS STRENGTHENING
MT-29	<b>PRANGOVSKI Goce, GJOSHEVSKI Goran, GOSHEV Gjorgji</b> RECORDING THE EXISTING CONDITION, LABORATORY TESTS AND PREPARING A REHABILITATION SOLUTION FOR THE INJECTION GALLERY OF THE GLOBOCICA DAM
MT-3	<b>BROCETA Gordana, LATINOVIC Marina, LAZIC Zarko</b> INVESTIGATION OF BRIDGE STRUCTURE FOLLOWING EUROPEAN NORMS
MT-34	<b>ROSHI Artur, NECHEVSKA-CVETANOVSKA Golubka</b> REPAIR AND STRENGTHENING OF RC BUILDINGS USING TRADITIONAL AND INNOVATIVE MATERIALS
MT-35	<b>SESOV Vlatko, GJORGJESKA Irena, BOJADZHIEVA Julijana, KITANOVSKI Toni, CHANEVA Jordanka, IVANOVSKI Dejan, EDIP Kemal</b> GROUND-PENETRATING RADAR AND ITS APPLICATION IN ENGINEERING PRACTICE
MT-9	<b>CVETKOVSKA Meri, TODOROV Koce, POSTOLOV Nikola, VOLCHEV Riste, CHIFLIGANEC Cvetanka, JOVSNOSKA Milica</b> ASSESSMENT AND REPAIR OF FIRE DAMAGED CONCRETE STRUCTURE
20 <sup>00</sup> -	Dinner and Music performance

9<sup>30</sup>-10<sup>00</sup> **Invited speakers**  
Chair: Veronika SENDOVA and Sergej CURILOV

**IP-8 STEVANOVIĆ Bosko**  
SOME EXAMPLES OF REHABILITATION AND RECONSTRUCTION OF HISTORICAL STRUCTURES IN SERBIA

10<sup>00</sup>-10<sup>15</sup> **Presentation of sponsors:**  
Golden Art

10<sup>15</sup>-11<sup>30</sup> **Parallel Session 3: Monitoring, Assessment and Repair of Masonry Structures**  
Chair: Veronika SENDOVA and Sergej CURILOV

**MT-12 DUMOVA-JOVANOSKA Elena, CHURILOV Sergey, SHENDOVA Veronika, KRSTEVSKA Lidija, DAMCHEVSKI Bojan, JANCHEV Dime**  
MASONRY STRENGTHENING BY STRUCTURAL REPOINTING – PROJECT STREP

**MT-31 RADOVANOVIĆ Zeljka**  
TESTING OF BRICK BLOCKS WALLS STRENGTHENED WITH FRCC COMPOSITE SYSTEMS

**SE-13 MILKOVA Kristina, SHEKUTKOSKA Gordijana, MISHKOVA Blagica, DUMOVA-JOVANOSKA Elena**  
DEVELOPMENT OF SEISMIC VULNERABILITY CURVES FOR EXISTING UNREINFORCED MASONRY BUILDINGS

**SE-26 SHOKLAROVSKI Antonio, KRSTEVSKA Lidija, NIKOLIKJ Zheljana**  
SEISMIC INVESTIGATION OF A MODEL OF DRY MASONRY STRUCTURE

**SE-8 DUMOVA-JOVANOSKA Elena, ALEKSOVSKI Grozde, DENKOVSKA Liljana, CHURILOV Sergey, MILKOVA Kristina, MICEVSKI Stefan**  
SEISMIC VULNERABILITY OF EXISTING MASONRY BUILDINGS-PROJECT SEISMOWALL, RECENT RESULTS

10<sup>15</sup>-11<sup>30</sup> **Parallel Session 4: Calculation, Monitoring, Assessment and Repair of Fire Damaged Structures**  
Chair: Mirjana MALESEV and Mirjana LABAN

**NA-1 CHIFLIGANEC Cvetanka, CVETKOVSKA Meri, LAZAROV Ljupco**  
TIMBER-CONCRETE COMPOSITE FLOOR WITH CONCRETE PLUG REINFORCED WITH STEEL PIPE AS CONNECTOR IN FIRE

**NA-11 PECENKO Robert, HOZJAN Tomaz**  
THERMO-PYROLYSIS MODEL TO DETERMINE CHARRING OF TIMBER EXPOSED TO NATURAL FIRE

**NA-6 HUC Sabina, HOZJAN Tomaz, PECENKO Robert**  
THICKNESS OF ZERO STRENGTH LAYER IN TIMBER CROSS-SECTION DURING STANDARD AND PARAMETRIC FIRES

**MT-5 CHUBRINOVSKA Aleksandra, POPOVSKI Denis, DAMJANOVSKI Vladimir**  
RECONSTRUCTION OF FIRE DAMAGED HOUSEHOLD

**CS-12 LISHI Ormal, ZACE Kevin, DZORLEV Igor, STRACEV-CURCIN Anka, LABAN Mirjana**  
FIRE DEVELOPMENT IN COMPARTMENT UNDER DIFFERENT FIRE MODELS AND ITS INFLUENCE ON RC BEAMS

11<sup>30</sup>-12<sup>00</sup> Coffee break

12<sup>00</sup>-12<sup>30</sup> **Invited speakers**  
Chair: Kiril GRAMATIKOV and Vlastimir RADONJANIN

**IP-1 BANJAD PECUR Ivana**  
NOVEL MATERIALS AND TECHNOLOGIES FOR REPAIR OF CONCRETE STRUCTURES

12<sup>30</sup>-12<sup>50</sup> **Presentation of sponsors:**  
Dojran Still

12<sup>50</sup>-14<sup>20</sup> **Parallel Session 5: Contemporary materials**  
Chair: Kiril GRAMATIKOV and Vlastimir RADONJANIN

**MM-9 MALESEV Mirjana, RADONJANIN Vlastimir, SUPIC Slobodan, LUKIC Ivan, LABAN Mirjana, KNEZEVIC Milos, GOGIC Mladen**  
APPLYING WASTE MATERIALS FOR ECO CONCRETE: IMPACT OF BIOMASS ASH UTILIZATION AS SCM ON BASIC PROPERTIES OF CONCRETE AND ENVIRONMENT PROTECTION

**MM-1 ARANGJELOVSKI Toni, ILIEVSKI Zlatko, NAKOV Darko, VELJANOVSKA Katerina, CHEREPNALKOVSKA Sonja**  
NATIONAL REQUIREMENTS FOR THE USE OF STANDARD FOR QUALITY OF CONCRETE MKS EN 206

**MM-12 UZUNOV Nikola, MARKOVSKI Goran**  
BONDING BETWEEN CONCRETE WITH DIFFERENT PERFORMANCES

**MT-30 RADOVANOVIĆ Zeljka**  
PROPERTIES OF THE MORTAR AND STONE FROM CHURCH ST.PAUL IN KOTOR

**MM-5 HADZIEVSKA Kristina, ARANGJELOVSKI Toni, FIDANCHEVSKA Emilija, VLADICHEVSKA Ljupka, POPOVSKA Marjana**  
INFLUENCE OF FLY ASH ON THE SULPHATE RESISTANCE OF CEMENT

**MM-10 NAJDOVSKA Natasha, ARANGJELOVSKI Toni**  
ANALYSIS OF THE INFLUENCE OF LIMESTONE POWDER TO PROPERTIES OF SELF COMPACTING CONCRETE

12<sup>50</sup>-14<sup>20</sup> **Parallel Session 6: Monitoring, Assessment and Repair of Concrete Structures**  
Chair: Ana TROMBEVA GAVRILOSKA and Ivan IGNJATOVIĆ

**MT-28 POPOVIĆ Predrag L., VLA Dunja**  
ASSESSMENT AND REPAIR OF EXTERIOR FACADES

**MT-32 RANKOVIĆ Slobodan, ZLATKOV Dragan, PETRONIJEVIĆ Predrag, PETROVIĆ Zarko**  
DIAGNOSTICS OF THE CONDITION OF THE FAIR HALL STRUCTURE IN LESCOVAC

**MT-36 STAMEV Dragan, MIHAJLOVSKI Siljan, MANEVSKI Naum, GOLABOSKI Bojan**  
REPAIR AND STRENGTHENING OF OPERATIONAL COAST "VOLUJICA" - PORT BAR MONTENEGRO

**MT-4 CHAPRAGOSKI Goran, NEČEVSKEA-CVETANOVSKA Golubka**  
STRENGTHENING OF EXISTING BUILDING USING CFRP WRAPPING SYSTEM

MT-40	<b>ZLATESKI Aleksandar, DELOVA Elena, POPOSKA Angela, BOZHINOVSKI Zhivko, GJORGJIEVSKA Elena</b> ANALYSIS OF THE STABILITY WITH A TECHNICAL SOLUTION FOR STRENGTHENING OF THE PRISON BUILDING IN BITOLA
MT-22	<b>MILEVSKI Slavko</b> CONDITION OF CONCRETE SURFACES OF SHAFT SPILWAY OF DAM'S "GLOBOCICA" AND "SHPILE"
14 <sup>20</sup> -16 <sup>00</sup>	LUNCH time
16 <sup>00</sup> -16 <sup>30</sup>	<b>Invited speakers</b> Chair: Zlatko MARKOVIC and Dusko LUCIC
IP-4	<b>PASTERNAK Hartmut</b> ASSESSMENT CONDITION, MAINTENANCE AND REPAIR OF STRUCTURES
16 <sup>30</sup> -18 <sup>15</sup>	<b>Parallel Session 7: Monitoring, Assessment and Repair of Steel Structures</b> Chair: Zlatko MARKOVIC and Dusko LUCIC
SE-18	<b>PETRESKI Borjan, GJORGJIEV Igor</b> EVALUATION OF IMPROVED MODELLING OF STEEL MOMENT RESISTING FRAMES SUBJECTED TO EARTHQUAKE LOADING
SS-1	<b>DENKOVSKI Damjan, POPOVSKI Denis, DAMJANOVSKI Vladimir</b> EXPERIMENTAL AND ANALYTICAL RESEARCH OF POST- INSTALLED ANCHORS IN NON- REINFORCED CONCRETE LOADED WITH TENSION FORCE
SS-11	<b>PARTIKOV Mile, NISEV Nikola, POPOVSKI Denis</b> ANALYSIS OF THE BEHAVIOUR OF SHEAR CONNECTORS WITH TRANSFERSAL SHEETING
SS-12	<b>PARTIKOV Mile, CVETANOVSKI Petar</b> EXPERIMENTAL AND ANALYTICAL RESEARCH OF ROTATIONAL STIFFNESS OF "T" JOINTS
SS-15	<b>PASKALOVSKI Gjoko, POPOVSKI Denis</b> DESIGN ASSESMENT OF STEEL LETTICE AND TUBULAR TOWERS
SS-19	<b>SUBOTIC Petar, LUCIC Dusko</b> THE INFLUENCE OF GLOBAL IMPERFECTIONS ACCORDING TO EN 1993-1-1 ON DESIGN OF STEEL FRAMES
SS-6	<b>JAKOVljeVIC Isidora, DOBRIC Jelena, MARKOVIC Zlatko</b> NUMERICAL STUDY ON BENDING BEHAVIOUR OF HOT-FINISHED AND COLD-FORMED ELLIPTICAL HOLLOW SECTIONS
16 <sup>30</sup> -18 <sup>15</sup>	<b>Parallel Session 8: Special Session - InfraNAT project</b> Chair: Vlatko SESOV
	<b>Ricardo MONTEIRO</b> PRESENTATION OF THE INFRA-NAT PROJECT
	<b>Elisa ZUCCOLO</b> CHARACTERISING SEISMIC HAZARD FOR REGIONAL ASSESSMENT
SE-25	<b>Radmila SALIC &amp; Kemal EDIP</b> SEISMIC HAZARD AND EARTHQUAKE ACCELEROGRAM SELECTION FOR STRUCTURAL ANALYSIS OF BRIDGES IN REPUBLIC OF N. MACEDONIA
	<b>Gerard J. O'REILLY</b> CHARACTERISING SEISMIC VULNERABILITY OF BRIDGE STRUCTURES + INFRASTRUCTURE VULNERABILITY ASSESSMENT
MT-38	<b>Marija VITANOVA</b> NUMERICAL MODELS AND FRAGILITY FUNCTIONS FOR BRIDGE TYPOLOGIES DEFINED IN N. MACEDONIA DATABASE
	<b>Barbara BORZI</b> DEVELOPMENT OF EXPOSURE AND FRAGILITY DATABASE WITHIN WEB-BASED PLATFORM + IMPLEMENTATION AND USAGE WITHIN WEB-BASED PLATFORM
18 <sup>15</sup> -18 <sup>30</sup>	Coffee break
18 <sup>30</sup> -19 <sup>15</sup>	<b>Poster session 2</b>
MM-11	<b>STOJANOVIC Marko, FLAJS Zeljko, JANKOVIC Ksenija, BOJOVIC Dragan, ARANDJELOVIC ANTIC Lana</b> NATURAL FREQUENCIES OF UHPFRC BEAM WITH DIFFERENT PERCENTAGES OF STEEL FIBER CONTENT
MM-2	<b>DRAGAS Jelena, PECIC Nenad</b> PAST, PRESENT AND FUTURE OF FLY ASH IN CONCRETE
MM-3	<b>GOGIC Mladen, KNEZEVIC Milos, IVANISEVIC Nenad, DELIJC Kemal, BELJKAS Zeljka, PEJOVIC Jelena, MALESEV Mirjana, SUPIC Slobodan</b> EXPLORING THE POSSIBILITY OF USING GRIT FOR ECO CONCRETE
MM-4	<b>GRUJOSKA Vesna, SAMARDZHIOSKA Todorka, GRUJOSKA Jasna</b> IMPROVEMENT OF THERMAL CONDUCTIVITY OF MORTARS WITH SLAG
MM-6	<b>JOVANOSKA Milica, SAMARDZIOSKA Todorka, VITANOV Vladimir, TODOROV Koce, CHIFLIGANEC Cvetanka</b> CURRENT DEVELOPMENTS TOWARDS SEISMIC METAMATERIALS
MM-8	<b>LABAN Mirjana, LUKIC Ivan, BULATOVIC Vesna, RADONJANIN Vlastimir, MALESEV Mirjana</b> ENERGY IMPROVEMENT OF RESIDENTIAL BUILDINGS FROM THE ASPECT OF FACADE FIRE SAFETY
NA-12	<b>TODOROV Koce, LAZAROV Ljupco</b> APPROACHES FOR MATHEMATICAL MODELING OF MASONRY INFILL
NA-13	<b>TODOROV Koce, LAZAROV Ljupco</b> VERIFICATION OF THE MASONRY INFILL PANEL MODEL THROUGH NUMERICAL SIMULATION OF EXPERIMENTS
NA-2	<b>CVETANOVSKI Petar, CHURILOV Sergej, DUMOVA-JOVANOVSKA Elena</b> CALIBRATION OF FINITE ELEMENT MODELS FOR UNREINFORCED MASONRY BUILDINGS
NA-4	<b>GULEVSKA Angela, MILKOVA Kristina, DUMOVA-JOVANOSKA Elena</b> CALIBRATION OF FEM CALCULATION MODEL OF MASONRY STRUCTURES WITH AVT TEST'S RESULTS

- NA-5 HEKIC Doron, ZAFIROV Trajche, GYURICZA Arnold, JANCOS Ildiko, Pavlos-NTOVAS Rafail, YANEV Emil, ROBERIO Diogo, ZABEL Volkmar**  
EXPERIMENTAL AND NUMERICAL ANALYSIS OF THE MODAL PARAMETERS OF A TELECOMMUNICATIONS TOWER
- NA-7 IVANOVSKI Dejan, KITANOVSKI Toni, CHANEVA Jordanka, SHESHOV Vlatko, BOJADZHIEVA Julijana, EDIP Kemal**  
EVALUATION AND ANALYSIS OF CONSTRUCTION PROCESS FOR COMPLEX BUILDING CONSISTED OF SEVERAL BLOCKS
- SE-1 ARSOV Mario, TODOROV Koce**  
INFLUENCE OF SECOND ORDER EFFECTS ON DESIGN OF STEEL MOMENT RESISTING FRAMES ACCORDING TO EUROCODE 8
- SE-11 IBRAIMI Shpresim, TODOROV Koce, LAZAROV Ljupco**  
SEISMIC BEHAVIOUR OF MASONRY INFILLED RC FRAME STRUCTURES WITH INCLUDED SOIL-STRUCTURE INTERACTION
- SE-16 MITOVSKI Stevcho, PETKOVSKI Ljupcho, PANOVSKA Frosina**  
ANALYSIS OF THE SEISMIC RESPONSE OF AN ARCH-GRAVITY DAM
- SE-17 NANEVSKA Ana, MIRCEVSKA Violeta, NASTEV Miroslav**  
HYDRAULIC INSTABILITY OF TAILINGS DAMS
- SE-19 POPOSKA Marina, STOJMANOVSKA Marta, BOZINOVSKI Zivko, DOJCHINOVSKI Dragi**  
NINE-STOREY STRUCTURE ANALYZED ON REAL ACCELEROGRAMS
- SE-20 RADUJKOVIC Aleksandra, LADJINOVIC Djordje**  
EVALUATION OF SEISMIC PERFORMANCE OF RC FRAMES FOR DIFFERENT DEMAND PARAMETERS
- SE-22 RISTIC Jelena, RISTIC Danilo**  
PROTOTYPE TESTING OF UNIFORMLY ADAPTIVE NEW VF MULTI-GAP SEISMIC ENERGY DISSIPATION DEVICE
- SE-23 RISTOVSKA Hristina, SALIC Radmila, MILUTINOVIC Zoran, MICAJKOV Slobodan**  
EQ-DGIS: DIGITAL AND GIS DATABASE FOR EARTHQUAKE RELATED DAMAGES: PILOT STUDY SKOPJE 1963 EARTHQUAKE
- SE-29 TRAJCHEVSKI Zoran, NECHEVSKA-CVETANOVSKA Golubka**  
COMPARATIVE ANALYSIS OF INFLUENCE OF MASONRY INFILL ON SEISMIC BEHAVIOR OF RC BUILDINGS
- SE-3 BOGDANOVIC Aleksandra, SALIC Radmila, STOJMANOVSKA Marta, EDIP Kemal**  
IMPLEMENTATION OF HAZARD MODELS CONSIDERING SOIL STRUCTURE INTERACTION ANALYSIS OF MULTYSTOREY FRAME WITH VISCOUSE DAMPERS
- SE-30 VITANOVA Marija, BOGDANOVIC Aleksandra, HRISTOVSKI Viktor**  
IMPROVING THE SEISMIC PERFORMANCE OF RC BRIDGE STRUCTURES BY USE OF VISCOUS DAMPERS
- SE-31 ZIVALJEVIC Vladimir, LADJINOVIC Djordje, KOVACEVIC Dusan, RAJIC Nikola**  
THE USE OF PUSHOVER ANALYSIS FOR EVALUATION OF BEHAVIOUR OF SIX-STOREY RC BUILDING DESIGNED ACCORDING TO CAPACITY DESIGN RULES
- SE-5 DIMITROV Ivan, NECHEVSKA-CVETANOVSKA Golubka**  
SEISMIC ASSESSMENT OF RC BUILDING STRUCTURES WITH SOFT STORY
- SE-9 EDIP Kefajet, NECHEVSKA-CVETANOVSKA Golubka**  
STRUCTURAL SYSTEMS OF HIGH-RISE BUILDINGS IN SEISMICALLY ACTIVE REGIONS

21<sup>00</sup>\_ Gala dinner

## Friday, 4.10.2019

10 <sup>00</sup> -10 <sup>45</sup>	<b>Round Table:</b> EUROCODES AND NATIONAL ANNEXES , Moderator: Petar CVETANOVSKI
10 <sup>45</sup> -11 <sup>45</sup>	<b>Round Table:</b> CONSTRUCTION LAW, Moderator: Miroslav GRCEV
11 <sup>45</sup> -12 <sup>00</sup>	Coffee break
12 <sup>00</sup> -12 <sup>30</sup>	<b>Invited Speaker</b> Chair: Elena DUMOVA JOVANOSKA and Roberta APOSTOLSKA
IP-3	<b>MARKOVSKI Goran</b> TO BE, OR NOT BE ... DEMOLISHED?
12 <sup>30</sup> -12 <sup>40</sup>	<b>Presentation of sponsors:</b> Neshvyl
12 <sup>40</sup> -14 <sup>20</sup>	<b>Parallel Session 9: Structural Health Monitoring</b> Chair: Elena DUMOVA JOVANOSKA and Roberta APOSTOLSKA
MT-2	<b>BOGOEVSKA Simona, CHATZI Eleni, DUMOVA-JOVANOSKA Elena, HOFFER Ruediger</b> DATA-DRIVEN STRUCTURAL HEALTH MONITORING AND DIAGNOSIS OF OPERATING WIND TURBINES
MT-16	<b>GJORGJIEV Igor, JEKIJ Goran, ZHUROVSKI Aleksandar, GAREVSKI Mihail</b> EXPERIMENTAL IN-SITY TESTING OF 40 STOREY RESIDENTAL BUILDING BY FORCED AND AMBIENT VIBRATION METHODS
MT-6	<b>CHURILOV Sergey, ATANASOVSKI Saso, MIHAJLOVIC Tino, DUMOVA-JOVANOSKA Elena</b> LONG-TERM MONITORING OF THE BELL TOWER OF CHURCH OF ST. CLEMENT OF OHRID IN SKOPJE
MT-7	<b>CHURILOV Sergey, MICEVSKI Stefan, RUMENOVSKI Aleksandar, DUMOVA-JOVANOSKA Elena</b> AMBIENT VIBRATION TESTING OF UNREINFORCED MASONRY BUILDINGS IN OHRID
NA-9	<b>MICHEL Philipp, BUTENWEG Christoph, KLINKEL Sven</b> EXAMPLES FOR THE INFLUENCE OF SSI EFFECTS ON THE DYNAMIC STIFFNESS OF THE FOUNDATION-SOIL-SYSTEM OF AN ONSHORE WIND TURBINE
ST-9	<b>MOURATIDIS Anastasios</b> SMART TECHNOLOGIES IN ROAD ASSET MANAGEMENT
CS-4	<b>FORMAN Patrick, MARK Peter</b> LIGHT CONCRETE STRUCTURES
12 <sup>40</sup> -14 <sup>20</sup>	<b>Parallel Session 10: Seismic Engineering</b> Chair: Koce TODOROV and Lidija KRSTEVSKA
SE-14	<b>MILUTINOVIC Zoran, SALIC Radmila</b> SEISMIC ZONING OF REPUBLIC OF N. MACEDONIA ACCORDING EUROCODE 8 REQUIREMENTS
SE-15	<b>MILUTINOVIC Zoran, SALIC Radmila, LAURENTIU Danciu</b> MEASURING ASSOCIATION BETWEEN THE TWO RECENT SEISMIC HAZARD ASSESSMENTS FOR RN MACEDONIA
SE-2	<b>BOGDANOVIC Aleksandra, KRSTEVSKA Lidija, POPOSKA Angela, SHOKLAROVSKI Antonio, MANOJLOVSKI Filip</b> SHAKE TABLE TESTS OF NONSTRUCTURAL SYSTEMS IN DYNLAB-IZIIS, SKOPJE
SE-21	<b>RAKICEVIC Zoran, BOGDANOVIC Aleksandra, JEKIC Goran, GEORGIEV Igor, MARKOVSKI Igor, FILIPOVSKI Dejan, NAUMOVSKI Nikola, PETRESKI Borjan</b> DYNLAB IZIIS - AS A PART OF H2020 "SEISMOLOGY AND EARTHQUAKE ENGINEERING RESEARCH INFRASTRUCTURE ALLIANCE FOR EUROPE" – SERA
SE-24	<b>RUNEVSKI Kristijan, APOSTOLSKA Roberta, BOZHINOVSKI Zhivko, SHENDOVA Veronika, STOJANOVSKI Blagoj, MARKOVSKI Igor</b> QUASI STATIC TESTS OF PRESTRESSED PRECAST HOLLOW CORE SLABS - RC BEAM CONNECTIONS
SE-6	<b>DIMITROVSKI Mirko, SHENDOVA Veronika, TRAJCHEVSKI Jovan, TOMIC Daniel</b> SEISMIC PERFORMANCE, MODELING AND ANALYSIS OF PRECAST FRAME TIMBER STRUCTURES
SE-12	<b>MANOJLOVSKI Filip, SHOKLAROVSKI Antonio, POPOSKA Angela, BOGDANOVIC Aleksandra, KRSTEVSKA Lidija</b> EXPERIMENTAL INVESTIGATIONS OF GLASS CLADDINGS SEISMIC RESPONSE
14 <sup>20</sup> -16 <sup>00</sup>	LUNCH time
16 <sup>00</sup> -16 <sup>30</sup>	<b>Invited Speaker</b> Chair: Darko NAKOV and Marina RAKOCEVIC
IP-7	<b>SHENDOVA Veronika</b> IZIIS' INTEGRATED APPROACH IN SEISMIC RETROFITTING OF STRUCTURES, HISTORIC BUILDINGS AND MONUMENTS
16 <sup>30</sup> -18 <sup>00</sup>	<b>Parallel Session 11: Numerical Analysis of Structures</b> Chair: Darko NAKOV and Marina RAKOCEVIC
NA-10	<b>NEZIRI Zabedin, YVES-BARD Pierre, SALAMEH Christelle</b> SOIL-STRUCTURE SPECTRAL COINCIDENCE FOR MULTI DEGREE OF FREEDOM, ELASTO-PLASTIC BUILDINGS
NA-3	<b>DZOLEV Igor, RASETA Andrija, LADJINOVIC Djordje, RADUJKOVIC Aleksandra, STRACEV-CURCIN Anka</b> INFLUENCE OF TENSILE STRESS SOFTENING IN NONLINEAR CONCRETE MODELLING
SE-10	<b>EDIP Kemal, SHESHOV Vlatko, BOJADZHIEVA Julijana, KITANOVSKI Toni, CHANEVA Jordanka, IVANOVSKI Dejan</b> SOFT STOREY EFFECTS ON SEISMIC ANALYSIS OF MULTISTOREY FRAME IN SSI PROBLEMS
SE-27	<b>TOMIC Daniel, MILUTINOVIC Zoran, SALIC Radmila, TRAJCHEVSKI Jovan, DIMITROVSKI Mirko</b> SEISMIC ASSESSMENT AND FAILURE MECHANISM OF 14-STOREY RC BUILDING
SE-28	<b>TRAJCHEVSKI Jovan, MILUTINOVIC Zoran, SALIC Radmila, TOMIKJ Daniel, DIMITROVSKI Mirko</b> COMPARATIVE ANALYSIS AND SEISMIC ASSESMENT OF A TYPICAL SIX STORY RC STRUCTURE FROM THE CITY WALL COMPLEX IN SKOPJE
SE-4	<b>DELOVA Elena, BOZINOVSKI Zivko, SHENDOVA Veronika, ZLATESKI Aleksandar</b> DESIGN AND ANALYSIS STABLE AND ECONOMIC REINFORCED CONCRETE STRUCTURES WITH CONTROLLED AND CONDUCTED DUCTILE BEHAVIOUR



16 <sup>30</sup> -18 <sup>00</sup>	<b>Parallel Session 12: Selected Topics</b> Chair: Nenad IVANISEVIC and Donco PARTOV
SS-5	<b>IVANOVA Blagovesta</b> HISTORICAL DOCUMENTS FOR THE DESIGN OF THE STEEL STRUCTURES AT THE END OF THE 19TH CENTURY
ST-11	<b>NAUMOVSKI Nikola, KRSTEVSKA Lidija</b> VIBRATIONS IN URBAN MEDIA, WITH A PARTICULAR EMPHASIS ON VIBRATIONS DUE TO RAILWAY TRAFFIC
ST-12	<b>STOYANOV Aleksandar</b> ANALYSIS OF OFTEN IRREGULARITIES IN TERMS OF HEALTH AND SAFETY AT CONSTRUCTION SITES IN BULGARIA
ST-15	<b>TASEVSKI Boris, ALEKSANDROV Boris</b> BENEFITS FROM 3D MODELLING (BIM) AND THE REVIEW OF WORKS FOR ONE PROJECT FROM IDEA TO REALIZATION
ST-4	<b>IVANOVSKA DESKOVA Ana</b> STRUCTURE AS A SYMBOL: MODERNIST HIGH-RISES IN SKOPJE
18 <sup>00</sup> -18 <sup>45</sup>	<b>Poster session 3</b>
SS-10	<b>MIKAROVSKA Stefaniya, POPOVSKI Denis</b> ANALYSIS OF RESISTANCE AND STABILITY OF CASTELLATED COMPOSITE BEAM FOR VARIOUS NUMBER OF SHEAR CONNECTORS
SS-14	<b>PASKALOVSKI Gjoko, POPOVSKI Denis</b> WIND LOAD ASSESMENT OF STEEL LATTICE AND TUBULAR TOWERS
SS-16	<b>POPOVIC Svetislav, RAKOCEVIC Marina</b> RING FLANGE CONNECTION - DESIGN PRINCIPLES AND INFLUENCE OF IMPERFECTIONS
SS-17	<b>POPOVSKA Elena, POPOVSKI Denis, DAMJANOVSKI Vladimir</b> PARKING ON FLOOR WITH IRREGULAR PLAN
SS-18	<b>RAJIC Nikola, LADJINOVIC Djordje, ZIVALJEVIC Vladimir</b> WIND LOADS ON TRANSMISSION LINE LATTICE TOWER COMPARISON ACCORDING TO EUROPEAN AND NATIONAL REGULATIONS
SS-2	<b>DJUKIC Mirjana, MARKOVIC Zlatko, LUCIC Dusko</b> COMPOSITE SLIM FLOOR BEAMS WITH WEB OPENINGS-OVERVIEW OF EXPERIMENTAL REASEARCH AND NUMERICAL ANALYSIS
SS-20	<b>ZIVALJEVIC Vladimir, JOVANOVIC Djordje, KOVACEVIC Dusan</b> EVALUATION OF THE INSTABILITY BEHAVIOR OF THE ECCENTRICALLY COMPRESSED THIN-WALLED STEEL COLUMN
SS-21	<b>ZIVALJEVIC Vladimir, JOVANOVIC Djordje, VUKOBRATOVIC Vladimir</b> EVALUATION OF THE INSTABILITY BEHAVIOR OF THE Laterally Displaced THIN-WALLED STEEL FRAME
SS-22	<b>ZIVKOVIC Srdjan, TURNIC Dragana, Marija SURDILOVIC Spasojevic, MILOSEVIC Marko, NIKOLIC Vladan</b> MODELING OF SEMI-RIGID CONNECTIONS OF STEEL CONSTRUCTION
SS-4	<b>GJUKAJ Anita, TROMBEVA-GAVRILOSKA Ana, CVETANOVSKI Petar</b> DESIGN MOMENT RESISTING OF END PLATE CONNECTION, EC3
SS-7	<b>LUCIC Dusko, BULATOVIC Teodora, TESOVIC Ivana, MUHADINOVIC Mladen, JANKOVIC Milena, VUCINIC Milos, SIPCIC Nevena</b> DETAILED DESIGN OF STEEL ROOF STRUCTURE FOR FOOTBAL STADIUM IN NIKSIC
SS-8	<b>LUKACEVIC Ivan, UNGUREANU Viorel, VALCIC Andjelo, PEDISIC Mislav</b> BENDING RESISTANCE OF COLD-FORMED BACK-TO-BACK BUILT-UP STEEL SECTIONS
ST-1	<b>ABAZI Sead, SUSINOV Bojan, KOCEVSKI Dimitrij, GACEVSKI Vasko</b> STABILITY ANALYSIS OF UNSTABLE ZONE OF R-1202 ROAD MAVROVO-DEBAR
ST-10	<b>NAUMOVSKI Mihail, LAZAREVSKA Marijana</b> CORRECT RISK ASSESSMENT FOR MORE QUALIFIED CONSTRUCTION PROJECTS
ST-13	<b>STOYANOV Vencislav, STOYANOV Aleksandar</b> PROBLEMS AND SOLUTIONS TO ENSURE OF STOCK ON THE CONSTRUCTION SITE
ST-14	<b>TASESKI Goce, PELIVANOSKI Petko</b> METHODOLOGY FOR OPTIMAL CONCEPT SELECTION IN INFRASTRUCTURE WASTE TREATMENT SYSTEM
ST-16	<b>TRPEVSKI Strahinja</b> IWA STANDARDS WITH WB-EASYCALC SOFTWARE APPLICATION FOR SMALL SIZE PUCS ON A CASE OF MAKEDONSKI BROD
ST-17	<b>TRPEVSKI Strahinja</b> SUSTANABLE ROAD NETWORK DEVELOPMENT OPPORTUNITIES IN SOUTH-EAST REGION IN NORTH MACEDONIA
ST-18	<b>TRPEVSKI Strahinja</b> APPLIED TOOLS FOR MANAGEMENT WATER SUPPLY AND WASTEWATER INFRASTRUCTURE TO PROTECT OHRID LAKE
ST-19	<b>ZAFIROVSKI Zlatko, VELICHKOVSKI Ivo</b> COMPARATIVE ANALYSIS FOR OPTIMAL SOLUTION FOR THE OPTION OF CONSTRUCTION IN THE SUBSTRUCTURES
ST-2	<b>DERVISHI Sokol, BOJAXHIU Jonida</b> IMPACT OF PRECIEVED INDOOR ENVIRONMENTAL QUALITY ON OVERALL SATISFACTION IN FIVE HIGH SCHOOL BUILDINGS IN TIRANA, ALBANIA
ST-3	<b>DERVISHI Sokol, OSMANI Jona, Rudina Belba</b> THERMAL PERFORMANCE EVALUATION OF AN INDUSTRIAL SITE IN POGRADEEC, ALBANIA: AN ADAPTIVE REUSE APPROACH
ST-5	<b>JOVANOSKA Milica, SAMARDZIOSKA Todorka</b> ASSESSMENT OF CLASSROOM ACOUSTIC PARAMETERS
ST-6	<b>LAZAREVSKA Marijana, NAUMOVSKI Mihail</b> RISKS IN CONSTRUCTION PROJECTS
ST-7	<b>LAZAREVSKA Marijana</b> ANSI/PMI STANDARD FOR RISKS MANAGMENT OF CONSTRUCTION PROJECTS
18 <sup>45</sup> -19 <sup>00</sup>	<b>Closing ceremony</b>
19 <sup>00</sup> -20 <sup>00</sup>	Dinner
20 <sup>00</sup> -	Lake Ohrid night cruise

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