

06TH

INTERNATIONAL
SCIENTIFIC
CONFERENCE

METHODOLOGY & ARCHAEOLOGY

Zagreb, 6th – 7th December 2018

<http://www.ffzg.unizg.hr/metarh/>

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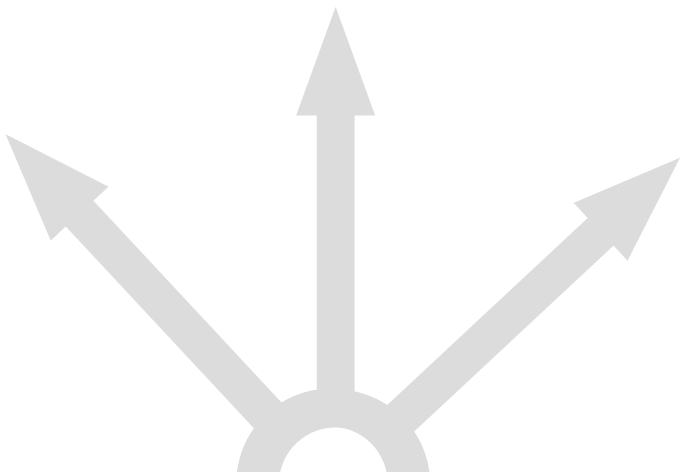
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CONFERENCE METHODOLOGY & ARCHAEOMETRY

The scientific conference ***Methodology and Archaeometry*** is being organised by the Department of Archaeology, Faculty of Humanities and Social Sciences since 2013. The goal of the conference is to entice interdisciplinarity, critical thinking, new insights and approaches as well as new theoretical frameworks in contemporary archaeological science.

Coverage of a wide spectrum of themes and scientific disciplines has resulted in papers and discussions that promote scientific issues in the fields of methodology, documentation and interpretation of archaeological data.

The interdisciplinary character of the conference brings together archaeologists and researchers from other scientific disciplines with whom archaeologists collaborate closely; and who – through their work, projects and ideas – promote new insights about Interpretation of the human life in the past.

Section Methodology

Obtaining and collecting data is an essential part of the archaeological research process. How we collect and interpret data defines the validity of our interpretation. We use different techniques, approaches and tools which help us to reconstruct the past processes and to give more objective and comprehensive picture of the past. Contemporary interpretation tools alleviate and speed the data collection and also provide us with countless possibilities of interpretation, protection and presentation of archaeological sites and the landscapes encompassing them.

Section Archaeometry

Having in mind limited information we obtain from archaeological excavations and from the classification of archaeological material, cooperation with other scientific disciplines becomes unnecessary, to obtain as much information as possible on the conditions and the way in which the humans lived in the past. Contemporary archaeology is a very heterogeneous discipline encompassing interest groups focussed on various periods, regions, theoretical frameworks and methodological techniques. Aside from the description of mechanical and physical features of a specific artefact or material, various archaeometrical analyses help us to direct our scientific focus to questions regarding the ways and features included in the social and cultural life of people who made, used, exchanged and discarded those objects. Cooperation with the natural sciences provides answers to many questions, but it also demands an additional level of caution when selecting adequate scientific analysis for a specific archaeological problem. It also demands a continuous cooperation of a specific expert and an archaeologist from sample collection to the final interpretation.

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PROGRAMME

PROGRAMME

Thursday, 6st of December

9:00 – 9:15

Opening

Key-note lecture:

9:15 – 9:45

Dimitrij Mlekuž

ALS and landscape archaeology

Chair: Jacqueline Balen

9:45 – 10:00

Predrag Novaković & Dimitrij Mlekuž

Challenges of Big data in archaeology

10:05 – 10:20

Sara Popović

ArchaeoCulTour project – an integrated approach to landscape study

10:25 – 10:40

Lujana Paraman, Filomena Sirovica & Dinko Tresić Pavičić

Sutilija hill above Trogir: Value loss assessment of the site damaged by contemporary stone exploitation

10:45 – 11:00

Branko Mušič, Igor Medarić, Barbara Horn, Petra Basar, Hrvoje Potrebeca, Igor Vukmanić, Ina Miloglav & Rajna Šošić Klindžić

Archaeological geophysics – an overview on experiences from surveys in Slavonia and Baranja

11:05 – 11:35

COFFEE BREAK (Library Foyer)



Chair: Predrag Novaković

11:35 – 11:50

Luka Gruškovnjak

Theoretical models of soil formation and soil geomorphology and their archaeological implications

11:55 - 12:10

Žarko Tankosić

An Approach to Survey Methodology from the Aegean: Norwegian Archaeological Survey in the Karystia

12:15 - 12:30

Rebecca M. Seifried & Helena Tomas

The Trials and Tribulations of Surveying the Cetina River Valley

12:35 - 12:50

Dubravko Gajski & Ana Solter

Spatial accuracy of a photogrammetrically reconstructed archaeological artefacts

12:55 - 13:10

Ivana Ožanić Roguljić, Kristina Turkalj & Kristina Jelinčić Vučković

The database of antique (Greek and Roman) archaeological sites of the Republic of Croatia

13:15 – 13:35

COFFEE BREAK (Library Foyer)

Chair: Rajna Šošić Klindžić

13:35 - 13:50

Dushka Urem-Kotsou

Pottery and cooking practices. An experimental approach to the study of use-alterations related to processing of food

13:55 - 14:10

Andreja Kudelić, Ina Miloglav, Izabela Andrašić, Dalibor Branković, Petra Lacković, Valentina Lončarić, Mia Marijan, Franka Ovčarić & Gabrijela Perhaj

Understanding the complex mechanisms of ceramic production in prehistory – experimental approach

14:15- 14:30

Milica Tapavički-Ilić & Jelena Anđelković Grašar

Storytelling. Is there a better method of archaeological site interpretation?

14:35- 14:50

Katarina Šprem & Ivor Karavanić

Results of a second lithic trampling experiment – some questions and a few answers

14:55 - 15:10

Franka Ovčarić & Branka Tomić

An experimental approach to reconstruction of wool dyeing in archaeology

15:15 - 15:30

Dora Šimić & Slavica Bošnjak

The technology of processing hard animal materials from the Vučedol site

15:35 – 16:30

LUNCH BREAK

16:30 - 17:15

POSTER PRESENTATION in the Library Foyer

Vidan Dimić

In chase for traces-experimental researches of polished stone axes, adzes and chisels and comparative traceological analyses

Katarina Šprem, Robert Matijašić & Rajna Šošić Klindžić

Stone as a resource in prehistory and antiquity

Selena Vitezović

Reconstructing the chaîne opératoire of the prehistoric osseous artefacts

Dragana Antonović, Selena Vitezović & Vidan Dimić

Tracing the evidence of prehistoric copper mining in Serbia

Antonela Barbir, Nikola Vukosavljević & Dario Vujević

Methodological approach to the taphonomic analysis of archaeomalacological assemblages: a case study of Vlakno cave

Viktória Mozgai, Boglárka A. Topa, Tamás G. Weiszbürg, Zsolt Mráv & Bernadett Bajnóczi
Study of the niello inlays of a unique late Roman silver augur staff (lituus) from Brigetio, Pannonia (Hungary)

Jugoslav Pendić, Jelena Jovanović, Sofija Stefanović & Jelena Marković

People of Lepenski Vir: first results of developing guidelines for digitalization of osteoarchaeological record

Miroslav Vuković, Helena Tomas, Nikola Vukosavljević & Marcel Burić

Image-based modelling approach to the documentation of Crvenkuša cave site

Igor Kulenović, Šime Vrkić & Neda Kulenović Očelić

Documenting, analyzing and evaluating a Dinaric karst landscape

Barbara Horn, Branko Mušič, Igor Medarić & Dimitrij Mlekuž

Geophysical and archaeological research of Eneolithic pile dwelling settlement Gornje Mostišče – emphasis on electrical resistivity tomography method

Jasmina Štajdohar, Žiga Kokalj & Ivan Šprajc

Lidar-based volumetric analysis of Maya settlement in the southeastern Campeche, Mexico

Miroslav Vuković, Ina Miloglav & Ivana Ožanić Roguljić

Methodological approach to a digital reconstruction of the Late Antiquity drywall structures from Banjače site (South Croatia)



AFTERNOON PROGRAMME

18:00

Visit to Archaeological Museum in Zagreb- conservation and preparation workshops, Museum depository and permanent exhibitions

20:00

Mingling in Kota café bar, Medulićeva 20.

Friday, 7th of December

Chair: Jacqueline Balen

10:00 - 10:15

Ki Suk Park, Ralf Milke, Erik Rybacki & Sabine Reinhold

Application of image analysis for the identification of ceramic pottery production technologies in the North Caucasus in the Bronze Age and the Iron Age

10:20 - 10:35

Andreja Kudelić, Attila Kreiter & Dinko Tresić Pavičić

Reconstructing the chaîne opératoire of Middle Bronze Age Pannonian Encrusted pottery: a case study of Jagodnjak-Krčevine (NE Croatia)

10:40 - 10:55

Esmeralda Agolli

Classification of Archaeological Ceramics: Insights from a Conceptual and Ideational Perspective

11:00 - 11:15

Sergios Menelaou

Beyond networks and macro-scale analysis: unravelling local micro-histories of pottery through an integrated methodology

11:20 - 11:35

Rajna Šošić Klindžić

After archaeometry gives us 42, what do we do?

11:40 - 12:10

COFFEE BREAK (Library Foyer)

Chair: Selena Vitezović

12:10 - 12:25

Viktória Mozgai, Bernadett Bajnóczi, Ernst Pernicka, Zoltán May, István Fórizs, Zsolt Mráv, Marianna Dági & Mária Tóth

Multi-analytical archaeometric investigation of late Roman silver objects from the Pannonian provinces – implications on composition, raw material provenance and technology

12:30 – 12:45

Tomislav Brenko, Sibila Borojević Šoštarić &, Stanko Ružičić

Mineralogical and geochemical characteristics of ore for possible iron production in Podravina region, NE Croatia

12:50 - 13:05

Ivan Jerković, Željana Bašić Ivana Kužić & Šimun Anđelinović

Application of posterior probabilities in osteometric sex estimation: a study on antique and late antique Salona population

13:10 – 13:25

Ante Lozina, Ivana Kružić, Šimun Anđelinović & Željana Bašić

Procedures regarding human osteological remains from excavation to presentation – European experiences

13:30 – 13:45

Goran Tomac

Mesolithic diet in the Žukovica cave (South Dalmatia, Croatia)

13:50 - 14:10

COFFEE BREAK (Library Foyer)

Chair: Nikola Vukosavljević

14:10 – 14:25

Andreja Sironić, Jadranka Barešić & Ines Krajcar Bronić

Bone dating at the Zagreb Radiocarbon laboratory, Croatia

14:30 – 14:45

Ines Krajcar Bronić, Andreja Sironić, Damir Borković & Marno Milotić

Can we determine the age of an old olive tree by the 14C dating method?

14:50 – 15:05

Laura Polonijo, Sara Essert, Andreja Kudelić & Snježana Karavanić

New evidence of nutritional habits during the Late Bronze Age: analysis of the carbonized plant remains from Kalnik-Igrišče



15:10 – 15:25

Luna Pavlović

Archaeobotanical research of the prehistoric site Ripač, Bosnia and Herzegovina

15:30 – 15:45

Petar Gabrić, Marko Banda, Ivor Karavanić & Luka Bulian

Lower and Middle Palaeolithic stone toolmaking and language:
a preliminary experimental archaeological and psycholinguistic study

15:50

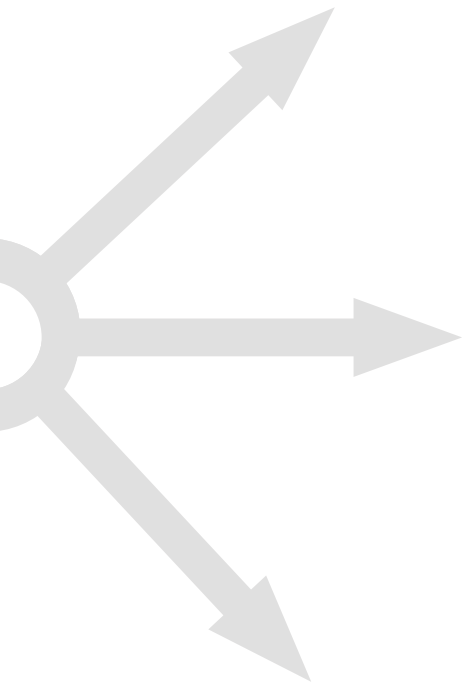
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ABSTRACTS

mary and secondary deposits of different raw material in the Northern Adriatic that may have been used in prehistory and antiquity of Istria to obtain a relevant reference base for provenance studies. Istria is a geographically relatively enclosed region with geological surface deposits that allow for different raw stone material exploitation. Depending on the stone raw material, different macroscopic and microscopic analyses will be used.

Selena Vitezović

Institute of Archaeology, Belgrade, Serbia

Reconstructing the chaîne opératoire of the prehistoric osseous artefacts

The bone industry was an important segment of prehistoric industries; osseous raw materials were widely used for everyday tools, weapons and ornaments, along with wood and stone. Reconstruction of the manufacturing procedures is important for analyses of the organisation of production, technological know-how and in general the importance of this craft for the given prehistoric community. Traces of manufacture are often covered by use wear traces; however, they are sometimes partially preserved on the finished objects. Combined analyses of manufacture debris, semi-finished items and traces still visible on used objects can provide the reconstruction of the manufacturing procedures. In this poster will be presented several examples of reconstructing the production sequence for some Neolithic artefacts, using macro- and microscopic observations and interpreted after the experimental results of different authors.

Dragana Antonović, Selena Vitezović & Vidan Dimić

Institute of Archaeology, Belgrade, Serbia

Tracing the evidence of prehistoric copper mining in Serbia

Mining of metallic raw materials and the knowledge of the ore processing technology represent one of the key turning points in human history, which changed dramatically not only the economy of the prehistoric societies but also worldviews in general. Relatively frequent finds of malachite lumps and beads, discovered at several Mesolithic and Early Neolithic sites across Serbia show that the prehistoric artisans were already familiar with the technical traits of these raw materials.

Prehistoric metallurgy was invented in the Late Neolithic Vinča culture in Serbia, c. 5000 BC. The first exploitation of the carbonate copper ores (malachite, azurite) is confirmed on the prehistoric mine of Rudna Glava near Majdanpek. The production of copper and later bronze objects gradually increased through the Eneolithic and the Bronze Age. This increase in the production of objects must have been followed by an increase in ore exploitation. However, it is still unknown which mines were active during the post-Vinča metal ages.

In this poster will be presented the methodological framework for a multi-disciplinary approach to the search of the traces of prehistoric copper mining on the territory of Serbia and some of the preliminary results.



In order to reconstruct the system of the copper ore acquiring, a detailed survey of all so far known copper sources on the territory of Serbia is needed. Beside ground-field survey, the studies should include the use of the LIDAR technology. This method already provided positive results in finding the traces of early mining activities in Bulgaria. The next step is creating the comprehensive database which will enable correlating diverse analyses of prehistoric copper and bronze objects from one side and samples obtained from the mines from the other.

Antonela Barbir¹, Nikola Vukosavljević² & Dario Vujević³

¹Institute of Archaeology, Zagreb; ²Department of Archaeology, Faculty of Humanities and Social Sciences, University of Zagreb; ³Department of Archaeology, University of Zadar, Croatia

Methodological approach to taphonomic analysis of archaeomalacological assemblages: case study of Vlakno cave

Shells of marine and land mollusc exploited by prehistoric humans contain archives of palaeoecological and palaeoclimatic data, as well as of human behaviour in coastal settings. Here we present a method for studying archaeomalacological assemblages from cave sites and describe an application of this method in the analysis of remains recovered from systematic excavations at Vlakno cave (Dugi island, Croatia). The study was based on marine gastropods, marine bivalves and terrestrial gastropods from late Pleistocene and early Holocene layers. In that period, a significant paleogeographic and palaeoecological changes occurred, mostly visible in the Adriatic area through flooding of the north Adriatic lowland by increasing sea level. Taphonomic studies have an important role in the identification of agents that modify shells and of processes that affect shell midden formation. This study contributes to enhanced interpretations of human activities and paleoenvironmental and paleoecological reconstructions of eastern Adriatic coast.

**Viktória Mozgai¹, Boglárka A. Topa², Tamás G. Weiszbürg³, Zsolt Mráv⁴
& Bernadett Bajnóczi¹**

¹Institute for Geological and Geochemical Research, Research Centre for Astronomy and Earth Sciences, Hungarian Academy of Sciences, Budapest; ²Department of Mineralogy and Petrology, Hungarian Natural History Museum, Budapest; ³Department of Mineralogy, Eötvös Loránd University, Budapest; ⁴Hungarian National Museum, Budapest, Hungary

Study of the niello inlays of a unique late Roman silver augur staff (lituus) from Brigetio, Pannonia (Hungary)

Niello, a bluish black metal sulphide, which was widely used for decoration of metal objects in the Roman Empire. However, our knowledge concerning the exact Roman-period niello technique, the appearance of binary silver-copper sulphide niello decorated silver objects is very obscure. An extensively nielloed silver augur staff (lituus), the only one known from the Roman Empire, was analysed non-destructively



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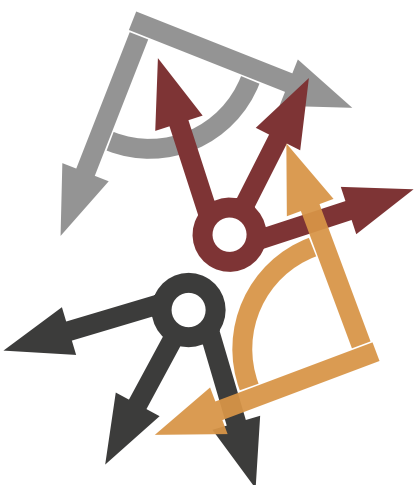
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METHODOLOGY & ARCHAEOMETRY
Zagreb, 6th – 7th December 2018



Ministarstvo
znanosti i obrazovanja

<http://www.ftzg.unizg.hr/metarh/>



NAVIGATION

- ODSJEK ZA ARHEOLOGIJU FF SVEUČILIŠTA U ZAGREBU
DEPARTMENT OF ARCHAEOLOGY
FACULTY OF HUMANITIES AND
SOCIAL SCIENCES,
UNIVERSITY OF ZAGREB

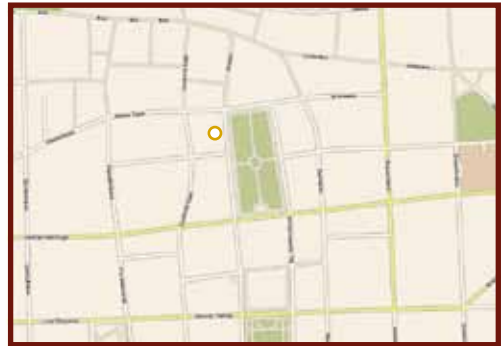
Ivana Lučića 3
www.ffzg.unizg.hr/arheo/

- ARHEOLOŠKI MUZEJ U ZAGREBU
ARCHAEOLOGICAL MUSEUM
IN ZAGREB

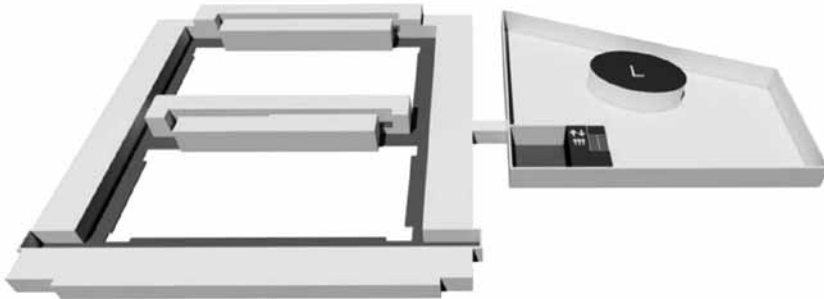
Trg Nikole Šubića Zrinskog 19
www.amz.hr

- KŌTA CAFÉ BAR

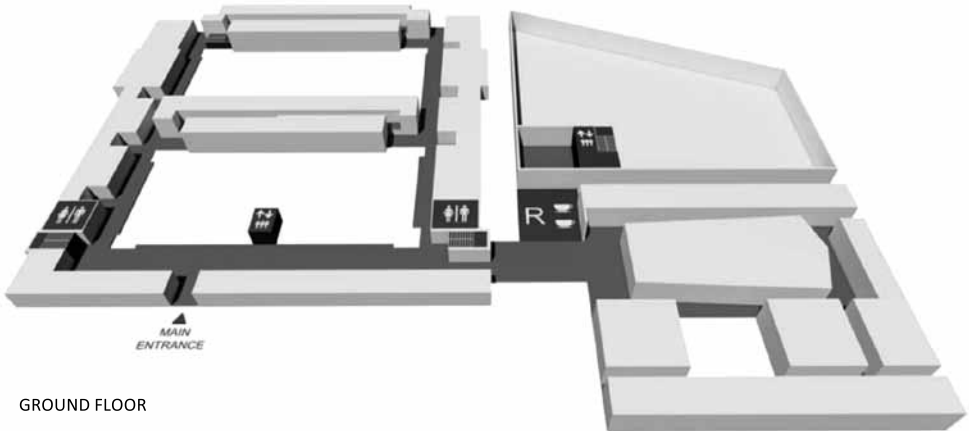
Medulićeva 20
www.kotabar.hr



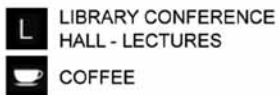
GROUND PLAN



2ND FLOOR



GROUND FLOOR

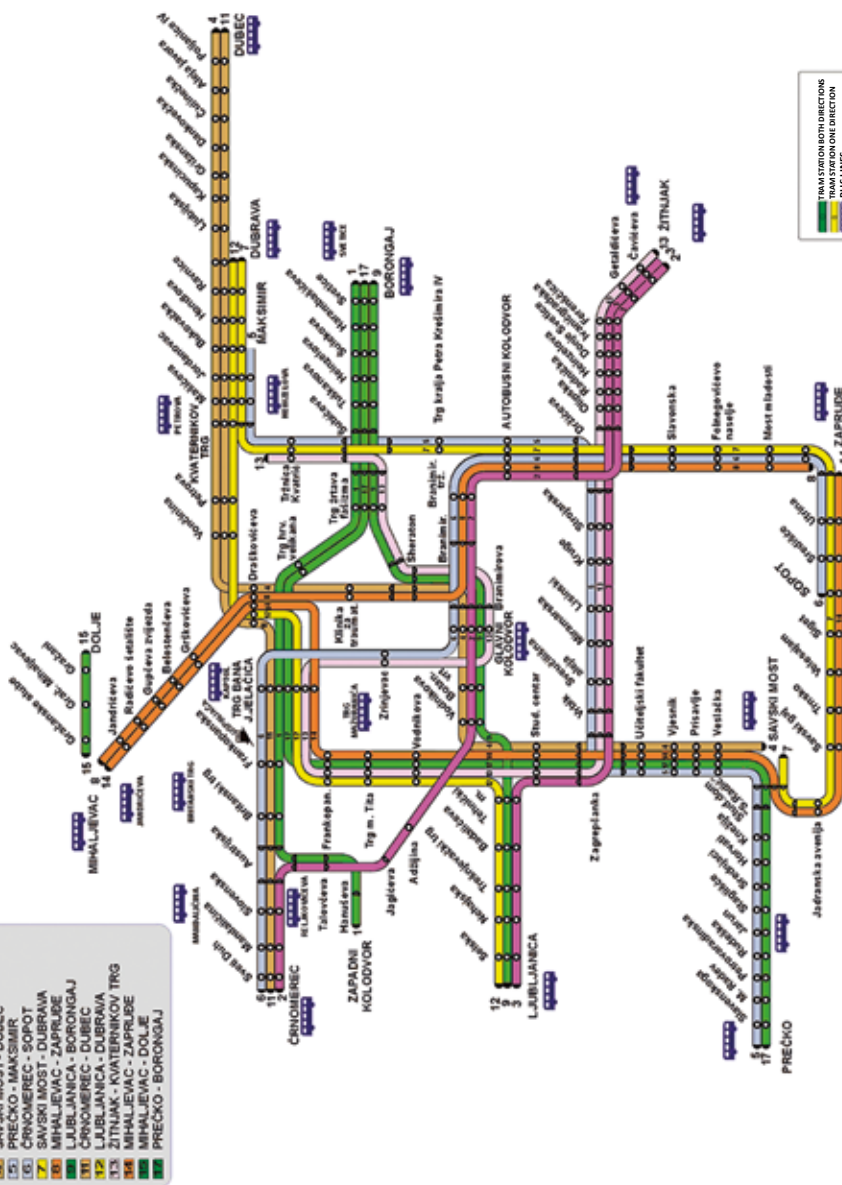


The lectures will be held at the Conference hall on the 2nd floor of the Faculty Library - on the right of the main entrance of the Faculty building.



ZAGREB MUNICIPAL TRANSIT SYSTEM (ZET)

<http://www.zet.hr/>



TRAM SCHEDULE

LINE NUMBER	TERMINAL	D E P A R T U R E						T I M E		
		MONDAY - FRIDAY			SATURDAY			SUNDAY		
		FIRST	LAST	EVERY	FIRST	LAST	EVERY	FIRST	LAST	EVERY
1	Zapadni kolodvor	4:42	23:29	12 - 19 min						
	Borongaj	4:51	23:20							
2	Črnomerec	4:42	23:20	8 - 13 min	4:44	23:15	10 - 16 min	5:33	23:29	15 - 20 min
	Savišče	4:44	23:30		4:49	23:32		5:40	23:37	
3	Ljubljana	4:03	23:30	12 - 16 min						
	Savišče	4:50	00:16							
4	Savski most	4:49	23:26	9 - 14 min	4:52	23:43	9 - 15 min	5:41	23:29	12 - 19 min
	Dubce	4:38	23:26		4:30	23:20		5:42	23:11	
5	Prečko	4:48	23:28	10 - 15 min	4:55	23:21	11 - 15 min	5:46	23:18	12 - 16 min
	Maksimiri	4:51	23:31		4:56	23:22		5:39	23:11	
6	Črnomerec	4:44	23:30	6 - 13 min	4:44	23:23	8 - 13 min	5:40	23:24	9 - 17 min
	Sopot	4:49	23:29		4:48	23:28		5:47	23:14	
7	Savski most	4:49	00:19	7 - 12 min	4:48	00:12	9 - 15 min	5:47	00:11	11 - 16 min
	Dubrava	3:56	23:26		3:57	23:20		4:56	23:21	
8	Mihaljevac	4:42	23:20	15 - 17 min						
	Zaprude	4:42	23:20							
9	Ljubljana	4:07	23:25	8 - 14 min	4:09	23:26	9 - 17 min	5:06	23:30	10 - 17 min
	Borongaj	4:41	23:57		4:43	00:00		5:40	00:05	
11	Črnomerec	4:38	23:38	6 - 12 min	4:45	23:21	8 - 17 min	5:39	23:23	11 - 17 min
	Dubce	4:43	23:18		4:45	23:25		5:40	23:22	
12	Ljubljana	3:56	23:28	7 - 11 min	4:02	23:20	8 - 15 min	5:02	23:16	9 - 17 min
	Dubrava	4:39	00:12		4:46	00:04		5:46	00:00	
13	Žitnjak	4:52	23:53	12 - 19 min	4:41	23:24	11 - 22 min	5:45	23:21	12 - 18 min
	Kvaternikov trg	4:32	23:35		4:52	23:23		5:45	23:22	
14	Mihaljevac	4:40	23:30	8 - 14 min	4:40	23:20	7 - 12 min	5:40	23:32	8 - 12 min
	Zaprude	4:37	23:33		4:45	23:19		5:45	23:07	
15	Mihaljevac	4:30	23:23	11 - 12 min	4:30	23:23	11 - 12 min	5:38	23:23	11 - 12 min
	Dolje	4:41	23:34		4:41	23:34		5:50	23:34	
17	Prečko	4:46	23:15	7 - 12 min	4:45	23:17	9 - 15 min	5:42	23:18	9 - 15 min
	Borongaj	4:43	23:23		4:53	23:25		5:50	23:26	

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