

Sedimentological evidence of climatic changes during the Miocene Climatic Optimum in the North Croatian Basin (SW Pannonian Basin System, Croatia)

Kovačić, Marijan; Pavelić, Davor; Tibljaš, Darko; Galić, Ivo; Marković, Frane; Pavičić, Ivica

Source / Izvornik: **Abstracts book / 36th International Meeting of Sedimentology, 2023, 295 - 295**

Conference paper / Rad u zborniku

Publication status / Verzija rada: **Published version / Objavljena verzija rada (izdavačev PDF)**

Permanent link / Trajna poveznica: <https://um.nsk.hr/um:nbn:hr:169:167178>

Rights / Prava: [In copyright](#) / [Zaštićeno autorskim pravom.](#)

Download date / Datum preuzimanja: **2024-07-31**



Repository / Repozitorij:

[Faculty of Mining, Geology and Petroleum Engineering Repository, University of Zagreb](#)





36TH



IAS

DU
BROV
NIK

MEETING OF SEDIMENTOLOGY

ABSTRACTS BOOK



12-16 June 2023, DUBROVNIK, CROATIA

36th International Meeting of Sedimentology
June 12–16, 2023, Dubrovnik, Croatia

ABSTRACTS BOOK



Organized by:

Croatian Geological Society (HGD) and International Association of Sedimentologists (IAS)



Organizing Committee

Lara Wacha, **chair**, *Croatian Geological Survey, Zagreb*
Katarina Gobo, *University of Zagreb, Faculty of Science*
Nikolina Ilijanić, *Croatian Geological Survey, Zagreb*
Tvrtko Korbar, *Croatian Geological Survey, Zagreb*
Marijan Kovačić, *University of Zagreb, Faculty of Science*
Duje Kukoč, *Croatian Geological Survey, Zagreb*
Borna Lužar-Oberiter, *University of Zagreb, Faculty of Science*
Maja Martinuš, *University of Zagreb, Faculty of Science*
Slobodan Miko, *Croatian Geological Survey, Zagreb*
Davor Pavelić, *University of Zagreb, Faculty of Mining, Geology and Petroleum Engineering*
Kristina Pikelj, *University of Zagreb, Faculty of Science*
Igor Vlahović, *University of Zagreb, Faculty of Mining, Geology and Petroleum Engineering*

Scientific Committee

Igor Vlahović, **president**, *University of Zagreb, Croatia*
Nevena Andrić Tomašević, *Karlsruhe Institute of Technology, Germany*
Bruno Campo, *University of Bologna, Italy*
Sonia Campos Soto, *Complutense University of Madrid, Spain*
Luca Caracciolo, *FAU Erlangen-Nürnberg, Germany*
Blanka Cvetko Tešović, *University of Zagreb, Croatia*
Shahin E. Dashtgard, *Simon Fraser University, Canada*
Andrea Di Capua, *National Research Council – IGAG, Italy*
Goran Durn, *University of Zagreb, Croatia*
Gianluca Frijia, *University of Ferrara, Italy*
Massimiliano Ghinassi, *University of Padova, Italy*
Luis Gibert Beotas, *University of Barcelona, Spain*
Bosiljka Glumac, *Smith College, USA*
Antun Husinec, *St. Lawrence University, USA*
Stuart Jones, *Durham University, UK*
Tvrtko Korbar, *Croatian Geological Survey, Croatia*
Marijan Kovačić, *University of Zagreb, Croatia*
Juan Carlos Laya, *Texas A&M University, USA*
Marta Marchegiano, *University of Granada, Spain*
Cole McCormick, *Pennsylvania State University, USA*
Mardi McNeil, *Geoscience Australia, Australia*
Theresa Nohl, *University of Vienna, Austria*
Shuxin Pan, *PetroChina – NWGI, China*
Guido Pastore, *University of Milano–Bicocca, Italy*
Maximiliano Paz, *University of Saskatchewan, Canada*
Daniel A. Petráš, *Czech Geological Survey, Czech Republic*
Miquel Poyatos-Moré, *Universitat Autònoma of Barcelona, Spain*
Joanna Pszonka, *Polish Academy of Sciences – MEERI, Poland*
John J.G. Reijmer, *Vrije Universiteit Amsterdam, The Netherlands*
Valentina Marzia Rossi, *National Research Council – IGG, Italy*
Arnoud Sloopman, *Colorado School of Mines, USA*
Miroslaw Slowakiewicz, *University of Warsaw, Poland*
Thomas Steuber, *Khalifa University of Science and Technology, Abu Dhabi, UAE*
Finn Surlyk, *University of Copenhagen, Denmark*
Michal Šujan, *Comenius University in Bratislava, Slovakia*
Romain Vaucher, *University of Geneva, Switzerland*
Alan Vranjković, *INA Oil Company, Croatia*
Lara Wacha, *Croatian Geological Survey, Croatia*
Guodong Wang, *PetroChina, China*
Pujun Wang, *Jilin University, China*
Valentin Zuchuat, *RWTH Aachen University, Germany*
Nadja Zupan Hajna, *Research Centre of the Slovenian Academy of Sciences and Arts, Slovenia*

Publisher: Croatian Geological Society (HGD)

For the publisher: Slobodan Miko

Editors: Igor Vlahović and Darko Matešić

Language Editor: Julie Robson (Scotland, United Kingdom)

Digital layout: Laser Plus d.o.o

Cover design: Ana Badrić

eISBN: 978-953-6907-79-3

**Theme 8. General topics in clastic sedimentology****General Session**

Poster presentation

Sedimentological evidence of climatic changes during the Miocene Climatic Optimum in the North Croatian Basin (SW Pannonian Basin System, Croatia)

Marijan Kovačić¹, Davor Pavelić², Darko Tibljaš¹, Ivo Galić², Frane Marković¹, Ivica Pavičić²¹University of Zagreb, Faculty of Science, Department of Geology, Zagreb, Croatia²University of Zagreb, Faculty of Mining, Geology and Petroleum Engineering, Department of Geology and Geological Engineering, Zagreb, Croatiamkovacic@geol.pmf.hr

The North Croatian Basin (NCB) occupies the south-western part of the Pannonian Basin System, and belongs to the Central Paratethys realm. Detailed sedimentological field studies and mineralogical and petrological analyses showed that a 40 m thick section composed of well-bedded mixed, carbonate–siliciclastic deposits with occurrence of pyroclastics indicate three evolutionary stages of lake development. The first evolutionary stage evolved in the late Early Miocene. It was characterised by mainly dolomite precipitation directly from the water body, and are associated with tuffites and marls, together with minerals such as analcime, hydrous Ca-bearing magnesium carbonate, and natrolite. This indicates deposition in a shallow, hydrologically closed lake of highly alkaline waters controlled by an arid climate. The second evolutionary stage is represented by the intercalation of dolomites and sandstones, indicating changes of hydrologically open and closed lacustrine environments as result of the frequent alternation arid and humid climates. The third stage, characterized by deposition of siliciclastics by gravity flows indicates the formation of a long-lived, hydrologically open lake that probably commenced in the Middle Miocene. The whole investigated lacustrine depositional sequence coincides with the Miocene Climatic Optimum generally characterized by hot and warm, and humid climates. However, the evolution of the closed lake that is correlative with similar lakes in northern Bosnia and central Serbia, indicates the existence of an arid zone in the region that was confined by areas characterized by a more humid climate in the late Early Miocene.