

# Plankton stratigraphy provides a mid-Paleogene age constraint for the Dalmatian Flysch in External Dinarides foreland basin

---

Mandic, Oleg; Ćorić, Stjepan; Kranner, Matthias; Pavelić, Davor

Source / Izvornik: **Abstracts book / 36th International Meeting of Sedimentology, 2023, 441 - 441**

Conference paper / Rad u zborniku

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

Permanent link / Trajna poveznica: <https://urn.nsk.hr/urn:nbn:hr:169:653601>

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

Download date / Datum preuzimanja: **2024-07-15**



Repository / Repozitorij:

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





36<sup>TH</sup>



IAS

DU  
BROV  
NIK

MEETING OF SEDIMENTOLOGY

ABSTRACTS BOOK



12-16 June 2023, DUBROVNIK, CROATIA

**36<sup>th</sup> 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*  
Mirosław 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 12. Stratigraphic markers and archives****General Session**

Oral presentation

# Plankton stratigraphy provides a mid-Paleogene age constraint for the Dalmatian Flysch in External Dinarides foreland basin

Oleg Mandić<sup>1</sup>, Stjepan Ćorić<sup>2</sup>, Matthias Kranner<sup>1</sup>, Davor Pavelić<sup>3</sup><sup>1</sup>Natural History Museum, Department of Geology and Paleontology, Vienna, Austria<sup>2</sup>Geosphere Austria, Department of Sedimentary Geology, Vienna, Austria<sup>3</sup>University of Zagreb, Faculty of Mining, Geology and Petroleum Engineering, Department of Geology and Geological Engineering, Zagreb, Croatia[oleg.mandic@nhm-wien.ac.at](mailto:oleg.mandic@nhm-wien.ac.at)

Flysch marks the synorogenic deposition in external foreland fold-and-thrust belts (FATB) around the globe. Thus, a precise estimation of its stratigraphic range is crucial for reconstructing the orogenic histories in these belts. Dinarides FATB is a young orogen settled between the Alps and the Hellenides in SE Europe originating from the NE-wards subduction of the Adriatic plate under the Eurasia. The youngest onshore flysch deposits termed the Dalmatian Flysch mark the position of the External Dinarides foreland basin (EDFB) stretching both over its interior High Karst as well as its exterior Dalmatian tectonic unit. There is an ongoing discussion on its stratigraphic context, contrasting a Paleogene with a Neogene age. Such a difference in age estimation provides severe uncertainties for the reconstruction of tectonic and paleogeographic constrains. In particular, the Neogene age of the Dalmatian Flysch would imply the coexistence of contractional and extensional tectonics in the Miocene of External Dinarides; the latter marked by establishment of numerous intramountain basins encompassing a long lasting lacustrine environment of the so-called Dinarides Lake System. To test the hypothesis on such coexistence, 76 sediment bulk-samples have been collected from 31 sites of the Dalmatian Flysch referred to by current literature as Miocene. They are distributed along a 400-km-long axial transect of the EDFB in Croatia, Bosnia–Herzegovina, and Montenegro between cities of Pag in the NW and Ulcinj in the SE. In contrast to previous studies, we use the calcareous plankton stratigraphy integrating nannoplankton and foraminifera records. Our preliminary results detected neither the presence of Miocene, nor of Oligocene assemblages in the samples. This result is supported by the occurrence of well-preserved planktonic foraminifera including the Middle to Late Eocene stratigraphic markers *Globigerinatheka barri*, *Hantkenina compressa*, and *Morozovelloides crassatus*. The corresponding stratigraphic interval is corroborated by the calcareous nannoplankton assemblages comprising index species such as *Sphenolithus furcatolithoides*, *Cribocentrum reticulatum*, *C. erbae*, and *Furcatolithus obtusus*. Accordingly, the present data prove a marine offshore deposition in the EDFB during the Oligocene and the Miocene improbable.