3D geological model of the Paleogene deposits in bauxitebearing district Snižnica (Posušje, BiH): from visualization to finding new bauxite deposits

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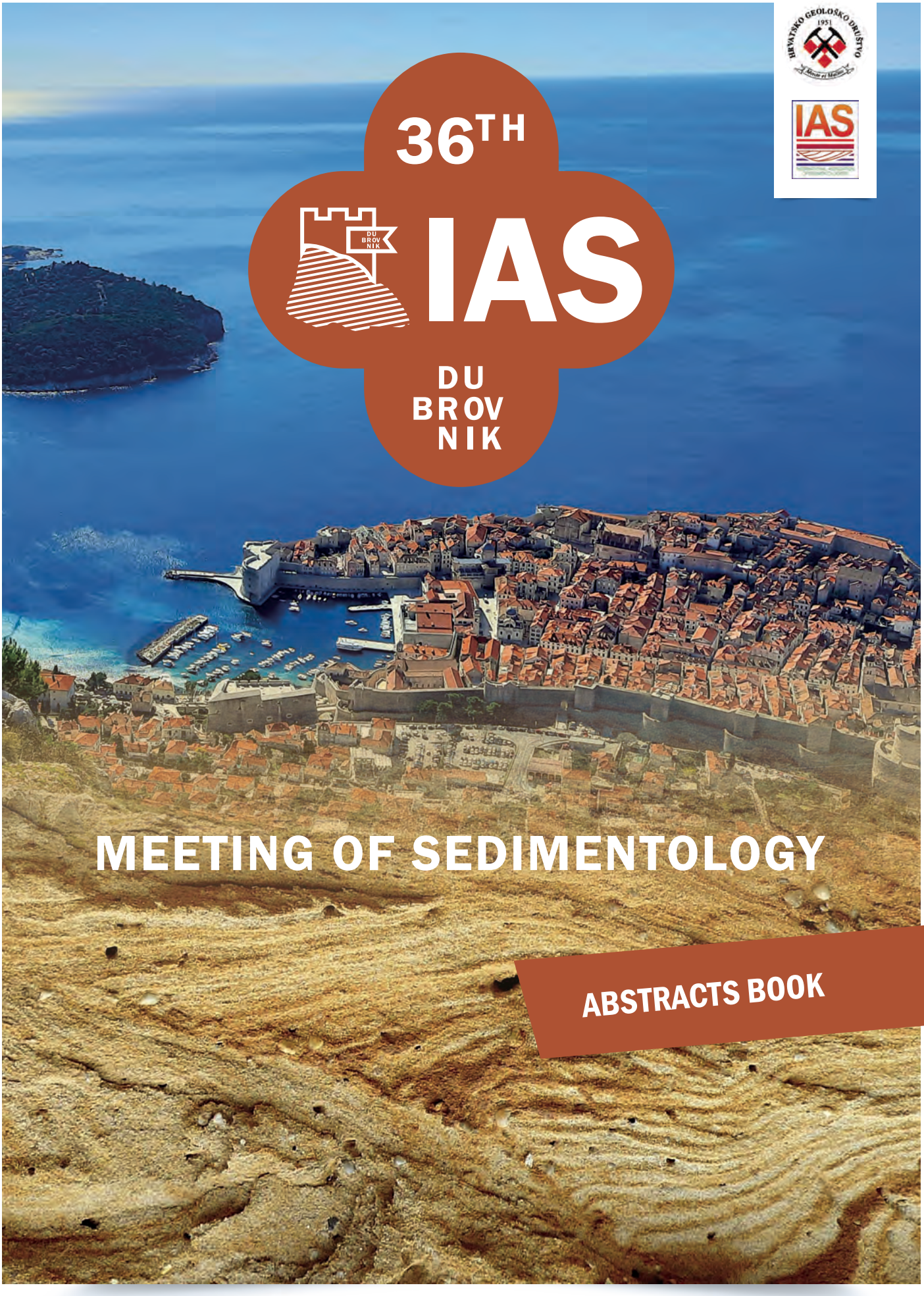

36TH IAS MEETING OF SEDIMENTOLOGY

DU BROV NIK

ABSTRACTS BOOK

12–16 June 2023, DUBROVNIK, **CROATIA**

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ABSTRACTS BOOK

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Theme 16. Techniques and technologies in sedimentology

General Session

Poster presentation

3D Geological model of the Paleogene deposits in bauxite-bearing district Snižnica (Posušje, BiH): from visualization to finding new bauxite deposits

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One of the economically most valuable bauxite deposits in the Adriatic Carbonate Platform (AdCP) originates from the terrestrial phase between the Upper Cretaceous and Paleogene. The bauxites formed during Upper Cretaceous–Paleogene emersion are present on the entire AdCP. One of the largest and most explored and exploited area is the bauxite-bearing area of Posušje in Bosnia and Herzegovina. Geological exploration and exploitation were continuous and intensive between 1950 and 1990, but after that, all works were stopped by war. In the last ten years, research has started again, and exploitation has been stable with a tendency to increase. This work results from the new research combined with old data collected by Rudnici Boksita d.o.o. Posušje. Footwall to the bauxite deposits are thick Cretaceous rudist limestones, and the hanging-wall is composed of diverse carbonate and clastic sediments of the Paleogene age. This work aimed to collect all available data, systematize them into a 3D geodatabase and construct a 3D geological model of Paleogene strata in Snižnica locality, one of the most complex districts in the area. This work results in a new geological map, 15 geological cross-sections, and a 3D geological model of the Paleogene strata. The 3D model shows the spatial distribution of different Paleogene lithofacies, and the thickness of Paleogene deposits, which is important for drilling planning and reconstruction of eroded parts of the Paleogene deposits. The thickness of Paleogene deposits ranges from 0 to almost 200 m, while the eroded part of Paleogene deposits reaches up to 100 m. The 3D geological model also indicates that the largest amount and largest deposits are located under the clastic series of deposits, especially if the eroded part is taken into account. The constructed 3D geological model and the conducted analysis can serve as a basis for planning further exploration works, primarily drill-holes to find new bauxite deposits.