

## OPTIMAL PHYSICAL MODEL FOR SELECTION OF SUPPORTING CONSTRUCTION AT THE CONSTRUCTION OF HORIZONTAL UNDERGROUND MINING FACILITIES

**Draško Marković**, University of Belgrade, Faculty of Mining and Geology, Đušina 7, Belgrade, Serbia

**Kemal Gutić** University of Tuzla, Faculty of Mining, Geology and Civil Engineering, Univerzitetska 2. Tuzla, Bosnia and Herzegovina  
[kemal.gutic@untz.ba](mailto:kemal.gutic@untz.ba)

*The stabilization strategy of excavation field couture implies a choice of supporting methods and type of supporting material as well as the determination of the most optimal period for support installation. The optimum model reduces geomorphologic changes at the surface due to construction of underground mining facilities. Physical-mechanical characteristics of the working environment and the definition of an optimal model are challenge for scientific research, projecting, mining practice and economics, and have a very important task in making a substantial changes in a very short period of time, which must meet the requirements of modern technology within exploitation of coal deposits through the goals as follows:*

- *achieving a high level of coal production both in certain mines, as well as at individual face and face line;*
- *achieving of a higher degree of production concentration at maximum application of mechanized work as well as its maximum improving;*
- *introduction of new technologies for mining of small mining fields and huge coal reserves at the protective pillars left under facilities, urban and agricultural areas;*
- *protection of the human environment from separation scraps, electric-ach from thermal power plants, slags from the ironworks as well as part of their anew lodgment into the excavated mining facilities.*

*In order to properly address the further development of underground exploitation, it is necessary to have perception and define more precisely the general and specific exploitation conditions in the coal deposits and then to determine the direction of development of the exploitation technology on the basis of the results achieved so far. Due to the large differences in geological age and intensive tectonic, the exploitation conditions in our mines are significantly different from exploitation conditions in other mines in the world.*

*The conditions of exploitation in our country are harder and different from one deposit to another, and often between the individual excavation fields in the same deposit.*

*Very common occurrence in the brown coal and lignite deposits in our county is intensive tectonics, which divides excavation fields into so called "excavation blocks" of smaller dimensions.*

**Key words:** *stabilization, meuble, polyurethanes, epoxy resin, arched roof, monitoring, geotechnique, geomorphology*