



Proceedings of the International Workshop on Numerical Modeling for Underground Mine Excavation Design (Paperback)

By Department of Health and Human Services, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health

Createspace, United States, 2013. Paperback. Book Condition: New. 279 x 216 mm. Language: English . Brand New Book ***** Print on Demand *****.Reliable prediction of mine stability, surface subsidence, mine water inflow, and mine gas emissions is essential not only for improving mine safety and reducing coal production costs, but also for assessing and managing the environmental impact of mining. This paper describes an integrated approach to simulation and prediction of mining-induced surface subsidence, mine groundwater inflow, aquifer interference, and mine gas emission. It involves a combination of site geological, geotechnical, and hydrogeological characterization; study of surface subsidence and subsurface rock caving mechanisms; monitoring of pore pressure changes of the surrounding strata, mine water inflows, and mine gas emission; and three-dimensional (3-D) numerical modeling. Central to this integrated approach is a 3-D computer code called COSFLOW developed by CSIRO Exploration and Mining of Australia in collaboration with NEDO and JCOAL of Japan to address the coal mine-related issues. COSFLOW incorporates unique features (e.g., Cosserat continuum formulation) that make it ideal for simulating coal mining-related issues and examining the interaction between rock fracture, aquifer interference and water flow, and gas emission.

Reviews

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