Geophysical Research Abstracts, Vol. 7, 02095, 2005
SRef-ID: 1607-7962/gra/EGU05-A-02095

MONITORING OF STRUCTURE AND STATE OF ROCK MASSIVE IN DEEP MINES, RESEARCH OF SELF ORGANIZATION IN ROCK MASSIVE

Hachay O.A.

Institute of geophysics UD RAS, Ekaterinburg,Russia

It is elaborated a system of monitoring using complex geophysical and geomechanical approaches. For the first time it had been received results of stability estimation of rock massive in natural conditions in a frame of the theory of open dynamical systems with hierarchic structure. We had suggested to analyze a parameter of interval intensity of decomposition zones, by which we had established a quantitative classification of massif's state in a frame of three gradations: stable, unstable and intermediate. It is searched the dynamics of the distribution of that parameter in time. It is showed that using electromagnetic monitoring we can search the process of self organization of decomposition zones. It is showed that it is necessary to achieve the geomechanical research according to shifting from the contour deeper into the massive. The natural data had been achieved using space-time electromagnetic induction active monitoring on two rock-shock mines Tashtagol and Evstuninskaja. The received results are of fundamental and applied significance. Firstly we had received an information about the nonlinear behavior of the geological medium under high man-caused stresses. It is a first step to search the nonlinear processes in natural controlled conditions. The applied significance is to use the results of monitoring for preventive goals before high energetic man-caused explosions.