



Slow waves moving near the openings in highly stressed conditions

Michail Guzev (1) and Vladimir Makarov (2)

(1) Institute of Applied Mathematics of FEB RAS (guzev@iam.dvo.ru), (2) Far-Eastern Federal University (vlmvv@mail.ru)

In situ experiments have shown the unusual deformation waves near the openings on high depth of the construction. Process of the wave spreading is beginning after the mining and has two stages of the zonal mesocracking structure formation and development [1].

Extending in a radial direction, the wave poorly fades with distance. For phenomenon modelling the theoretical decision for non-Euclidian models about opening of round cross-section in strongly compressed rock massif is used [2]. The decision qualitatively repeats behaviour of a wave in a rock mass, adjustment of phenomenological parametres is executed.

References

- [1] Vladimir V. Makarov, Mikhail A. Guzev, Vladimir N. Odintsev, Lyudmila S. Ksendzenko (2016) Periodical zonal character of damage near the openings in highly-stressed rock mass conditions. *Journal of Rock Mechanics and Geotechnical Engineering*. Volume 8, Issue 2, pp. 164–169.
- [2] M.A. Guzev, V.V. Makarov, 2007. Deforming and failure of the high stressed rocks around the openings, RAS Edit., Vladivostok, 2007, P. 232 (in Russian).