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STUDY OF VARIABLE HEAT EXCHANGE BETWEEN A THICKNESS LIMITED CYLINDRICAL PIPE AND THE ROCK MASSIF FOR APPLICATION IN MINE ENVIRONMENT

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Abstract

The problem the paper deals with is the determination of ground heat distribution on different distances inside a cylindrical mine work. Both interior radius and the exterior radii of the cylinder are known. The use of the range of temperatures is useful for the calculation of the heat exchange rock - air. Results dissemination allow the development of a mathematical model which may be applied to a series of natural conditions as well as to different geometrical shapes closer or not to the form of a cylinder.

Key words: air, dimensionless temperature, mathematical model, Newton method, temperature distribution, variable heat exchange

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