

PROGRESS IN STUDYING LOW FREQUENCY VIBRATION WAVES CAUSED BY BLASTING

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ABSTRACT

This report substantiates the connection that always exists between explosives and vibrations and draws attention to low frequency vibrations, which are the most dangerous for the structures affected.

Detailed information is also given on the geological circumstances that are favourable to the formation of low frequency waves, especially Rayleigh waves and, because propagation conditions are very different, the use of another law of transmissivity is advised instead of that of the U.S. Bureau of Mines.

Because low frequency waves are similar to low grade earthquakes, different treatment of the tensions caused in structures is suggested, in which spectrum analysis of the wave trains generated is used.

From the point of view of electronics, serious technical problems are encountered in measuring low frequency waves. These disadvantages must always be kept in mind in relation to knowing the range of application of specific measuring equipment.

Lastly, certain practical cases are discussed. They have been taken from among the many occasions on which RIO BLAST had to cope with the problem of low frequency waves.