## عنوان مقاله:

Magnitude of vibration triggering component determines safety of structures

## محل انتشار:

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## خلاصه مقاله:

Transmission of blast waves is a complex phenomenon and the characteristics vary with blast design parameters and geo-technical properties of medium. Frequency of vibration and triggering component for structural excitation generally quantifies safe vibration magnitude. At closer distance or higher elevations than the blast locations, vertical or transverse component will be the first arrival to trigger the sensor for monitoring and at far off distances longitudinal component triggers the sensor to monitor. Similarly, for shorter depth of blastholes and wider blast geometries, vertical or transverse component triggers the sensor to monitor even for longer distances of measurement. Analyzing the cause of such occurrence, the paper firstly puts forward a mathematical model to illustrate the same. Thereafter, considering single-degree of freedom for dynamic analysis of structures, the paper communicates that incident particle velocity exiting a structure to vibrate should be considered to limit vibration magnitude for safety of structures.

## کلمات کلیدی:

Blasting, Magnitude of Vibration, Wave, Structural Analyses