



Auto oscillation model of microseism's sources

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Abstract

The article suggests a model of oscillations of the concentrations of microseisms sources, based on well known equations used for mathematical modeling of biological and chemical processes. It is assumed that in the elastically brittle medium, there are two types of cracks (or zones of energy concentrations). The first type of cracks is seed, virtual that, which signals are so small that they are not registered against the background of the noise of seismological instruments. However, they are the triggers for larger cracks that generate microseisms. After the emission of microseismic pulses, the cracks of second type (fissures) lose their energy and partially go into seed cracks. Then the process repeats after increasing of seed cracks concentration, providing auto-waves of microseisms sources. The interaction between these types of cracks is described by a system of nonlinear equations.

Keywords

seed cracks, microseisms triggering, auto-oscillations,
nonlinear equations

References



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