

عنوان مقاله:

Study of electromagnetic waves induced of Earth tectonics

محل انتشار:

دومین همایش ملی پژوهش های کاربردی در ریاضی و فیزیک (سال: 1393)

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خلاصه مقاله:

Prior to large earthquakes the Earth sends out transient signals, sometimes strong, more often subtle and fleeting. These signals may consist of local magnetic field variations, electromagnetic emissions over a wide range of frequencies, a variety of atmospheric and ionospheric phenomena. Great uncertainty exists as to the nature of the processes that could produce such signals, both inside the Earth's crust and at the surface. The absence of a comprehensive physical mechanism has led to a patchwork of explanations, which are not internally consistent. Found marked on the theory that most crustal rocks contain dormant electronic charge carriers in the form of peroxy defects, $O_3Si=OO$ in SiO_3 , holds the key to a deeper understanding of these pre-earthquake signals. When rocks are stressed, peroxy links break, releasing electronic charge carriers, h_+ , known as positive holes. The positive holes are highly mobile and can flow out of the stressed subvolume. The situation is similar to that in a battery. The h_+ outflow is possible when the battery circuit closes. The h_+ outflow constitutes an electric current, which generates magnetic field variations and low frequency EM emissions. The study of chemical processes based on a model equation for electromagnetic waves is presented

کلمات کلیدی:

Electromagnetic waves, pre earthquake, tectonic

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