



Hypothetical physics and chemistry of volcanic eruptions: the doorway to their prediction

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This article presents a further development of the hypotheses concerning the possibility of predicting earthquakes. Those are based on the phenomenon of conversion of the trapped and stored during Earth's accretion latent energy of primordial hydrogen and helium releasing by degassing processes from the Earth's core and lower mantle. This latent energy converses into different types of chemical, electromagnetic and thermal energies of active compounds that are responsible for the major endogenic terrestrial processes. The dominating in seismology and volcanology theories that earthquake results from sudden slip on a tectonic fault and that only magma, and gases desolved in it, are supplying volcanic energy brought conclusions that earthquakes and eruptions are unpredictable. A possible solution is proposed based on the analyses of the physicochemical processes as participants in earthquake preparation (foreshocks – major shock – aftershocks – volcanic eruption) and on the characteristic rates of reflection of these processes on the Earth's surface. Volcanic eruption is considered to be a special case of earthquake-process where earthquake hypocenters rise to the earth surface. Influence of Sun-Moon-tides and volcanic ("harmonic") tremor are analyzed from physical-chemical point of view. The case story of the 1980 eruption of Mount St. Helens and the proposed monitoring of the recommended additional data provides a way of selecting a complex of reliable earthquake and volcanic eruption precursors.

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