

METHODS OF DYNAMIC GEOLOGY ON CRITICAL BORDER OF APPLICABILITY

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Theoretical bases of traditional methods of geodynamic reconstruction and forecasting are analysed in a view of concepts of fractal structures and nonlinearity of evolution of the geological medium. It is shown, that limits of their scientific-practical applicability are decisively defined by sensitive dependence of behaviour of nonlinear nonequilibrium geodynamic systems on initial conditions and low-contrast specificity of lithospheric anomalies of different ranks. Dynamics of discussed processes of rupturing and seismicity is essentially chaotic and unpredictable; this is consequence of their nature, but not of an insufficient level of researches. Processes of formation of paragenetic structural ensembles and anomalous concentrations of tectonic stresses, structurally-dynamic preparation and precursors of earthquakes are real. But for chaotic geosystems with exponential divergence of initially close ways of evolution, descriptions by probabilities are not reduced to the average trajectory, and the most exact dimensions do not lead to deterministic predictions of geocataclysms. Theoretical bases and methods of dynamic geology demand fundamental updating.

Keywords: dynamic geology, methods, geomedium, nonlinearity, fractality, faults, stress.