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Using of electromagnetic irradiation from Earthquake epicenter to forecast the epicenter. Principle of maximum

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Several effects occurring when racks crack and the random character of time of formation and location of fractures on the Earth crust lead to statistical nature of electromagnetic precursors to earthquakes. This does mean, that electromagnetic irradiation from faulting lead to forming of law correlated random type signal at the output of receiver of Electromagnetic irradiation carrying some information of earthquake.

We assume, that investigation is carried out by using of the net of receivers. In this case the processing system carrying out gathering and processing of electromagnetic information should be designed to record the maximum amount of such information. Optimization of functioning of the processing system makes it possible to predict the epicenter.

The developed mathematical model is optimized using variation method. Analytical equations are derived, which describe fundamental optimal dependences between main parameters of the system.

On the basis of found optimal dependences two tasks of research are formulated:

Task 1. Checking up of preliminary prognosis about epicenter.

Task 2. Making up of original prognosis about epicenter.

Solution of both tasks are well grounded, and geometrically commented.

The carried out research makes it possible to formulate following universal principle of maximum:

Principle of maximum: If any point A is actually the center of expected earthquake, and if parameters L_i (distance from receiver to expected epicenter, $i = \overline{1,n}$) and T_i (time period of information retrieval from receiver i, $i = \overline{1,n}$), characterizing receivers of the earthquake prediction net are chosen in line with found optimal dependence between them, the processing computer will detect the maximum amount of information about earthquake.

Namely this feature of optimal processing allows to carry out information location of epicenter of expected earthquake using geometrical construction.