

# **About Possibility of Using of Satellite Wave Monitoring for the Forecast of Catastrophic Earthquakes**

**V. I. Larkina**

Institute of terrestrial magnetism, ionosphere and distribution of radio-waves of the Russian Academy of Sciences, ИЗИРАН, Troitsk the Moscow area, 142190, Russia  
[larkina@izmiran.ru](mailto:larkina@izmiran.ru)

## **Abstract**

It is offered the schemes of remote monitoring of near-Earth space plasma for the purpose of revealing of disturbances of natural and technogenic character by results of satellite wave experiments. It will allow to organize high information monitoring of a condition ionosphere plasma, both over separate regions, and in planetary scale.

## **Project**

The project «SATELLITE MONITORING of IONOSPHERE FORECAST of EARTHQUAKES by RADIO PHYSICAL And RADIO ENGINEERING METHODS» is offered. The project purpose is creation of a technique, the outline sketch and a breadboard model of a hardware complex for monitoring by satellite companion of ionosphere forerunner of earthquakes by modern radio physical and radio engineering methods.

Project realization will open essentially new possibilities of reception of the information on the existential changes of parameters of near-Earth space plasma induced by the seismic phenomena which can be considered as forecasts of earthquakes.

Advantage of remote sounding of earthquakes forecasts by equipment of satellite basing is reception of global operative data not only on seismically active regions, but also and about the regions which were traditionally considered seismically quiet. It is necessary to notice, that the given method of supervision can be used as independently, and in a combination to land systems and monitoring aero-systems. In this case reception of a complex universal picture of processes in an ionosphere of the Earth accompanying the seismic phenomena is possible. The available reserve will allow quickly develop works on project performance of elaboration of methods and satellite complex for carrying out of satellite measurements of low-frequency radio noise and other phenomena accompanying processes of an intensification of seismic activity.

The project provides the decision of following problems:

- Working out of a method of satellite observations of earthquake forecasts,
- Elaboration of sketch project of satellite measurements complex,
- Make (produce) a breadboard of the high-sensitivity onboard measuring complex providing measurements of specified set of parameters taking into account requirements of TM systems,
- Automation of processing of the information according to the developed technique.

Prospective new aspects of a created technique «Satellite Monitoring ....» will allow, using novelty of integrated approach of measured parameters to raise reliability of the forecast and, in the long term, to take out it on qualitatively new level with expansion of area of supervision to the global.

As a result of project realization the technique of remote sounding will be developed and possibility of a binding of stationary monitoring to the scanned global is considered.

Therefore planned work have the global character, problems of earthquake forecast monitoring is actual for the decision of ecological and geophysical problems. This information will allow corresponding state structures to have more authentic forecast nature-

ecological and, hence, an economic situation in regions, especially in respect of prevention of victims and increase of material consequences of natural accidents.

Creation, in the long term, global satellite monitoring for remote sounding of forecasts of earthquakes in a combination to possibility of synchronous supervision will allow to organize continuous high-information monitoring of near-Earth space plasma as over separate regions, and planetary scale.