

# Estimation of energetic effectiveness of the ionization in creation of thermal anomalies before earthquakes based on OLR measurements.

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## Abstract

The nature of thermal anomalies observed before earthquakes is still the subject of scientific discussions. One of the possible options is the latent heat release due to the water molecules attachment (hydration) to the ions formed due to ionization produced by energetic alpha particles emitted by radon in the vicinity of active tectonic faults. We checked this hypothesis with the controlled active experiment with installations of artificial air ionization in Mexico used for artificial rains stimulation. OLR flux measured from onboard NOAA satellites shows effectiveness of ionization produced by installations and confirms the hypothesis of the thermal earthquake anomalies nature.

## 1. Introduction

Thermal anomalies before strong earthquakes are observed at different levels starting from the ground surface up to the top of clouds altitude (near 12 km). All kinds of anomalies were registered repeatedly by many researches before different earthquakes by remote sensing satellite technique. The most promising in the present moment is the Outgoing Longwave Radiation (OLR) anomaly measured at the top of clouds level. Its advantage is that it is measured within the infrared transparency window 8-12 microns and does not depend on the clouds presence [1]. It is difficult to expect that something like the ground surface temperature increase by 3-5 degrees or infrared emission emitted by rocks due to deformation can provide at the altitude 12 km the energy flux within the range 4 – 80 W/m<sup>2</sup> what is measured experimentally. Such amount of energy could be provided only by the process taking place directly in atmosphere. Such process which conforms to all observed experimental facts is the air ionization by radon and consequent latent heat release [2]. The ability of ionization process to create thermal anomalies can be checked by the direct active experiment using the special installations of the air ionization [3]. It was demonstrated that such installations can produce enough of heat to increase the air temperature few km around the installation.

## 2. Satellite Measurements

The OLR was measured over installations of air ionization in Mexico, and thermal anomalies spots were detected. The energy flux measured is compared with that from the seismically active areas. Calculations of the ionization rate which one might expect from the active fault are made using the data of ionization from installations and the levels of OLR anomalies before earthquakes and in active experiments.

## 3. References

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