

I hypothesize a correlation between irradiation of the ionosphere and localization of earthquake.

I hypothesize that the sun radiation with an energy that is greater of the escape energy in the ionosphere can give two possible consequences: the first possibility is a continuous drift of electron from the Earth ionosphere (with a ever greater escape energy that reduces the drift, and it seem unlikely over a long period), the second possibility is an oscillation of the electron drift that lasts one day (ejected electrons from the ionosphere and subsequent recaptures).

The electron drift can give a column of air with moving charges, and an electric field in the zone where there is a low soil conductivity; this could trigger the discharge when the air, and soil, conductivity change with the humidity (lightnings).

I use the Arrival Time Difference Thunderstorm data to obtain an estimate of the measured energy stored in the ground (ignoring the invisible discharges), due to the electrostatic forces: the density of the lightning in Europe is  $0.1 - 4$  flashes for  $km^2$  for year, so that the mean energy release is  $(0.1 - 4) \cdot 5 \cdot 10^8$  J, and the whole Europe energy release for year is  $(0.5 - 20) \cdot 10^{15}$  J that is the energy of the order of hundred Little Boy atomic bomb (another possibility is the measure of the energy absorbed by the ionosphere and the thermal radiation of the ionosphere); the non-uniformity of the electric charge of the crust could give localized tensions in addition to the plate tectonics.

If it is all true, then each soil always disperses electrical charge (invisible lightning), and these flows can be measured with great closed loops on the soil.

If it is true, then one can check the charge flows when earthquake happen (in highly seismic areas), and the behavior of the ionosphere over the earthquake zone (with satellite data).

I hypothesize that zone of the Earth's crust can be considered a capacitor subject to discharge and charge phases in a day, and that the different relative permittivity between different zone can give an electric field that can stress the faults between different zones; so that a surface measurement of the mean electric fiels (many low cost measuring sensors) could give a measure of the electric stress in the faults in a country.