



Comparison of space weather effects and tectonic activity effects on the ionosphere and levels of their predictability.

Sergey Pulinetz (1) and Dmitry Davidenko (2)

(1) Space Research Institute, RAS, Space Geophysics, Moscow, Russian Federation (pulse1549@gmail.com, +7-495-3331248), (2) S.P. Korolev Rocket and Space Corporation «ENERGIA», Korolev, Russian Federation

Space weather produces profound effects on the ionosphere at the all levels (from D-region up to the plasmasphere). Except the electron concentration redistribution (what is most often discussed in the literature) we deal with the changes of ion composition, heating of the ionosphere what leads to the scale height vertical profile modification. Serious problems of these effects which have many space and terrestrial technological systems put forward the problem of space weather effects predictability the quality of which in the present moment is not high in different models.

Recent years presented the reliable proofs that tectonic activity may produce the local effects within the ionosphere, but their order of magnitude can be the same as during geomagnetic storms, and sometimes even higher. It means that technological systems are prone to the degradation of their quality during disturbed periods.

This paper tries to present the comparison of both types of disturbances in terms of their temporal, spatial and dynamic characteristics and to analyze the probability of their forecast.