

**IMPORTANCE OF VERY LOW FREQUENCY RADIO SIGNAL DATA  
REGISTERED BY VLF-RECEIVER SYSTEM**

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The ionosphere as a part of terrestrial atmosphere is very sensitive to numerous external factors. Variable influences coming from both the outer space and from different sources of Earth make the ionospheric plasma characteristics time dependent. The most significant perturber from the outer space originates in solar activity whose consequences can be either periodical (due to the solar cycle, and seasonal and diurnal variations) or transient (arising from solar flares and coronal mass ejections). Significant transient perturbations can also result from gamma ray bursts and gamma ray flares from various sources. In addition, there are some processes in the Earth lithosphere (such as volcanic eruptions, earthquakes) as well as in the atmosphere (such as lightnings) that cause non-periodic disturbances in the ionosphere.

The induced ionospheric disturbances may directly affect human activities on Earth related to, for example, radio communications, planned networks of mobile communications satellites, high precision applications of global navigation satellite systems, etc.

Investigation of physical processes under time varying conditions in the ionosphere is thus interesting not only for purely scientific reasons but it also has numerous important practical applications. The main way to study the low ionosphere (altitudes between 60 and 90 km) is based on properties of propagating VLF radio waves, i.e. on monitoring time variations of VLF radio signal amplitudes and phases and forming corresponding data bases. In the Institute of Physics in Belgrade this is done by two receiver systems incorporated in AWESOME and AbsPAL international networks.