Poster paper

PROCEDURE FOR DETECTION OF CHARACTERISTIC RADIO SIGNAL VARIATIONS INDUCED BY SOLAR X-RAY FLARES

Dušan Raičević[1], Jovan Bajčetić[1], Vladimir M. Čadež[2] and Aleksandra Nina[3]

[1]*Department of Telecommunications and Information Science, University of Defence, Military Academy, Belgrade, Serbia*
[2]*Astronomical Observatory of Belgrade, Belgrade, Serbia*
[3]*Institute of Physics, University of Belgrade, Belgrade, Serbia*
E-mail: ricek9@gmail.com

To make a general study of characteristic variations of radio signals induced by a given type of perturber it is necessary to do a relevant statistical analysis which requires automatization of signal processing (Nina *et al.* 2015).

This paper shows a procedure for determination of characteristic parameters of signal perturbation induced by solar X-ray flares as one of the most important sources of perturbation of the low ionosphere and, consequently, the electromagnetic wave propagation in this medium (Bajčetić *et al.* in press). These variations are result from the electron density increase during such an event. Here we apply the developed procedure on amplitude values of the signal emitted by the 23.4 kHz DHO radio transmitter in Germany and received by the AWESOME receiver in the Institute of Physics in Belgrade, Serbia. The outputs of the procedure are times of the start, maximum and end of the amplitude perturbation, corresponding amplitudes, as well as their differences.

References

Bajčetić, J., Nina, A., Čadež, V. M., Todorović, B. M.: *Thermal Science,* in press, doi:10.2298/TSCI141223084B.

Nina, A., Simić, S., Srećković, V. A., Popović, L. Č.: 2015, *Geophysical Research Letters,* **42** (19), 8250.