

## **X-ray Solar flare signatures on two VLF signals through seasons**

**Aleksandra Kolarski**

*Technical faculty "Mihajlo Pupin", University of Novi Sad, Zrenjanin, Serbia*

X-ray radiation from Solar flare bursts highly affects subionospheric propagation of Very Low Frequency (VLF) (3-30 kHz) radio signals, transmitting in altitude range of lower ionospheric D-region (50-90 km). Caused deviations in signals' amplitude and phase delay from their regular values can be used for reconstruction of ionospheric plasma features. Amplitude and phase delay of VLF radio signals emitted from USA on frequency 24 kHz and UK on 22.1 kHz, and received in Belgrade (Serbia) by The Absolute Phase and Amplitude Logger (AbsPAL) recording system at the Institute of Physic (44.85N, 20.38W), were surveyed for signatures of isolated Solar flare events of moderate intensity (C and M class) through different seasons during the second half of the 23<sup>rd</sup> Solar cycle. Solar flux data were taken from GOES satellite database. Numerical simulations of related perturbations forced by inspected Solar flare events were performed using Long Wave Propagation Capability (LWPC) software. Main results are presented in this paper.