

POSSIBLE DETECTION OF THE GRBs AND γ -RAY ECHOS BY ANALYZING THE IONOSPHERIC PERTURBATIONS

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The radiation in different spectral domains (UV, soft and hard X and γ) is originated by various astrophysical phenomena and it is very important for dynamical processes in the terrestrial ionospheric plasma. However, the hard X and γ rays influence on the ionosphere has been in a focus of only a few studies, since a problem with reliable detections of plasma perturbations induced by them are very hard due to a number of other perturbations with similar ionospheric plasma characteristics changes. In this paper, we study possibility of detection of the short time terrestrial low ionospheric response to gamma ray bursts (GRBs) and the γ -ray echo depending of their spectral characteristics and central impact points. Here, we give a statistical analysis of perturbations of the 24.0 kHz very low frequency (VLF) signals emitted by NAA transmitter (USA) and recorded by VLF receiver located in Belgrade (Serbia) during periods around 71 GRBs events registered by SWIFT satellite between 31.08.2009. and 09.09.2012.