

## PERTURBATIONS OF THE LOWER IONOSPHERE DUE TO THE $\gamma$ , X AND UV STELLAR RADIATION

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The Belgrade system of VLF stations is simultaneous monitoring the properties of subionospheric propagating waves that reveal changes of the electrical properties of the ionospheric D-region during various stellar activities. These cosmic disturbances,  $\gamma$ , X and UV radiation, cause numerous complicated physical, chemical and dynamical phenomena in the lower ionosphere and may directly affect human activities. Besides a pure scientific interest to study the influence of this activity on the terrestrial atmosphere, the understanding and predicting the resulting turbulent regions of the ionosphere has important applications for radio communications, high-precision applications of global navigation satellite systems, etc. Among the high-energy phenomena that occur in the astrophysical context, probably the Soft Gamma-ray Repeaters (SGR) and the Gamma-Ray Bursts (GRB) are the most interesting. We show that the VLF technique is well suited to search for stellar events, and to provide a diagnostic of high-energy astrophysical phenomena.

## STARK-WIDTH REGULARITIES WITHIN SPECTRAL SERIES OF NEUTRAL ATOMS

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Stark-width dependences on the upper-level ionization potential within different spectral series of several neutral atoms have been studied and compared. Similar dependences have been found for electron- and proton-impact contributions to the Stark widths. The emphasis is on the term structure influence on the studied Stark-width dependences. Higher correlation between the empirical parameters were found when the temperature was increased. Neutral emitters were ranked by the regularity of their Stark broadening.