

VARIABILITY OF D-REGION PHOTOIONIZATION INDUCED BY Ly α RADIATION

A. Nina¹, V. M. Čadež², J. Bajčetić³ and M. Andrić³

¹*Institute of Physics, Pregrevica 118, 11080 Belgrade, Serbia*

²*Astronomical Observatory, Volgina 7, 11060 Belgrade, Serbia*

³*Department of Telecommunication and Information Science, Military Academy,
University of Defence, Generala Pavla Jurišića Šturma 33, 11000 Belgrade, Serbia*
E-mail: sandrast@ipb.ac.rs, vcadez@aob.rs, bajce05@yahoo.com, asmilenko@beatel.rs

The solar Ly α line is one of the most important external influences on chemical processes in the lowest ionospheric layer so called D region. This radiation plays the dominant role in the ionization of the upper part of the D-region under unperturbed conditions. In this paper, we present some of variations in influences of the Ly α radiation on the considered atmospheric layer which are induced by motions of Earth and Moon. The changes in the low ionosphere are detected by the very low frequency signals used as a tool for ionospheric monitoring based on radio wave propagation along given trajectories and registration of time varying physical parameters. In this paper we analyze the 23.4 kHz signal emitted in Germany and recorded in Serbia.

Invited Lecture

LINE SHIFTS IN LABORATORY PLASMA

B. M. Obradović

University of Belgrade, Faculty of Physics, Studentski Trg 12, 11000 Belgrade, Serbia

E-mail: obrat@ff.bg.ac.rs

Stark spectroscopy and polarization Stark spectroscopy of several types of plasmas produced by electrical discharges will be presented. Special attention will be paid on distinction between Stark shifts produced by charged plasma particles (micro-field) from Stark shifts produced by an electric field in the plasma sheaths region (macroscopic field).