

## TIME EVOLUTION OF X RADIATION SPECTRUM DURING A SOLAR X-RAY FLARE

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The influence of solar photons on the ionosphere significantly depends on their wavelength. Namely, the corresponding cross-sections for absorption and ionization processes in the atmosphere can vary by more than a factor of two or, in some cases, by several orders of magnitude. For this reason, knowledge on electromagnetic spectrum entering the terrestrial outer layer is important for plasma dynamic calculations. In quiet conditions, the Ly $\alpha$  photons dominate in ionization processes within the upper D-region. However, sudden processes in the Sun can cause intensive outbursts of other photons whose impact on the ionospheric ionization may significantly exceed the influences existing in an unperturbed state. In this work we analyze the time evolution of the X-radiation spectrum during a solar X-ray fare and present the electron density variations at fixed altitudes in the D-region.