

The longitudinal variations of the atomic oxygen emission of 557.7 nm

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The empirical model of the longitudinal variations of the intensity, temperature and height of the emissive layer of the atomic oxygen emission of 557.7 nm for different months has been created. It is based on the measurements at the 14 mid-latitude stations during International Geophysical Years (1957-1959), maximum of 19th cycle of solar activity ($F_{10.7} = 225$), and International Quiet Sun Years (1964-1965), minimum of solar activity ($F_{10.7} = 74$). The obtained results show that the intensities and temperatures for all months of year are larger over the continents than over oceans. These variations are caused by decrease of the height of the emissive layer. This is evidently due by orographic disturbances generated by zonal circulation flowing the terrestrial relief. This means that atmospheric models of the neutral components and the atomic oxygen must take into account these longitudinal changes of the atmospheric characteristics.

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