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Studies of artificial airglow emission at 557.7 nm (green line) of upper atmosphere caused by "Sura" facility

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Abstract

Some experimental results of artificial airglow emission at 557.7 nm (green line) during HF pumping of the ionosphere with specially designed HF pulsing sequence are reported. Ionospheric radio pumping was performed at the "Sura" radio facility situated near Niznhny Novgord, Russia. The measurements of airglow were handled at the Astronomical Observatory of Kazan State University (220 km to the east of "Sura" facility) by the astronomical telescope AZT-14 connected with the electric photometer. During several "Sura" runs enhancements of the airglow intensity in time with pump wave pulses were observed after the pump wave switch from continuous transmission to low duty cycle pulse transmission.

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Keywords

Artificial airglow emission, Electromagnetic emissions, HF radio waves, Ionosphere