

A survey of conditions for artificial aurora experiments at EISCAT Tromsø site using dynasonde data

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We report a brief survey of conditions for artificial aurora optical experiments in F region heating with O-mode at EISCAT Tromsø site using dynasonde data from 2000 to 2017. According to the results from our survey, we can find the following: the possible condition for the artificial aurora experiments is concentrated on twilight hours in both evening and morning, compared with late night hours; the possible condition appear in fall, winter, and spring while there is no chance in summer, and the month-to-month variation among fall, winter, and spring is not so clear. The year-to-year variation is well correlated with the solar cycle, and experiments during the solar minimum would be almost hopeless. These findings are useful for planning future artificial aurora optical experiments.

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