



## **Altitudinal behavior of the ionosphere over Millstone Hill during the October 2002 storms**

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The response of the ionosphere to geomagnetic activities is still a challenging topic. Geomagnetic disturbances drive the ionosphere deviating severely away from its normal state. A positive phase storm is called the situation when the deviation of the ionosphere from the normal state is positive, and a negative phase storm is designated to the opposite case. In this work, we report an investigation on the responses of the F2 peak and the topside ionosphere to the October 2002 geomagnetic storms. The data are the first 31 days long-duration observations of the Millstone Hill incoherent scatter radar in October 2002. The observations indicate the altitudinal behavior of the ionosphere over Millstone Hill during the storms. It reveals the relative contributions to ionospheric variations from changes in atmospheric compositions and dynamic processes.

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