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Hydroxyl airglow response to the 2006 Leonid and Geminid meteor showers

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Airglow measurements were performed with the two scanning grating spectrometers (GRIPS 3, GRIPS 4) at the German environmental research station “Schneefernerhaus”, Zugspitze (47.4° N, 11° E). Both instruments recorded the OH(3-1) transitions between 1.52 μm and 1.55 μm during the 2006 Leonid and Geminid showers.

Rotational temperatures and relative spectral intensities are calculated. During the Geminid shower a significant increase in intensity, compliant with theoretical predictions, is recorded. Superimposed on this increased intensity an enhancement of short periodic fluctuations is observed.

These findings are tentatively interpreted as being due to meteoroid activity. However, a certain impact of dynamical fluctuations, for example infrasonic waves cannot be excluded.