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## Metal concentrations in the upper atmosphere during meteor showers

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**Abstract.** Using the nadir-viewing Global Ozone Measuring Experiment (GOME) UV/VIS spectrometer on the ERS-2 satellite, we investigate short term variations in the vertical magnesium column densities in the atmosphere and any connection to possible enhanced mass deposition during a meteor shower. Time-dependent mass influx rates are derived for all the major meteor showers using published estimates of mass density and temporal profiles of meteor showers. An average daily sporadic background mass flux rate is also calculated and used as a baseline against which calculated shower mass flux rates are compared. These theoretical mass flux rates are then compared with GOME derived metal vertical column densities of Mg and Mg<sup>+</sup> from the years 1996–2001. There is no correlation between theoretical mass flux rates and changes in the Mg and Mg<sup>+</sup> metal column densities. A possible explanation for the lack of a shower related increase in metal concentrations may be differences in the mass regimes dominating the average background mass flux and shower mass flux.

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