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The NO Martian Nightglow observed with the SPICAM UV Spectrometer and comparison with a one-dimensional model

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Observations in the 108-317 nm wavelength range have been performed with the SPICAM ultraviolet spectrometer aboard the Mars Express (MEX) mission. SPICAM has observed the ultraviolet nightglow emission in the δ (190-240 nm) and γ (225-270 nm) bands of nitric oxide (*Bertaux et al*. 2005). This emission arises from the recombination between O(^{3}P) and N(^{4}S) atoms that are produced on the day side to form NO in the night side. We present a summary of the night limb observations performed during the MEX mission. In particular, we describe the variability of the brightness and peak altitude. We find that the altitude of maximum emission varies between 55 and 90 km and the brightness is in the range 0.2 to 4.5 kR. We compare these observations with the results of a chemical-diffusive atmospheric model which solves the continuity equation for O, N(^{4}S) and NO continuity equation using the finite volume method on one dimensional grid. The eddy coefficient, whose value is very uncertain, is a free parameter adjusted to match the observational data.