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Interactive comment on "Evidence of a significant rotational non-LTE effect in the CO_2 4.3 µm PFS-MEX limb spectra" *by* Alexander A. Kutepov et al.

Anonymous Referee #2

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The authors present a very interesting analysis of evidence of rotational non-LTE in the Martian upper atmosphere CO2 4.3 um daytime emission, with a nice explanation of the redistribution of SH band intensities from the line cores to the wings.

The authors should include in the paper the non-LTE rotational temperature and kinetic temperature at the tangent heights of the synthetic LOS radiation calculations.

LOS radiance simulations were conducted with and without line overlap. Does the ALI-ARMS code include line overlap (within the bands and between lines of different bands) in computing the ro-vibrational level populations? If not, how might line overlap in computing the ro-vibrational levels alter the simulated LOS radiance?

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Discussion paper

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The written quality of the paper is not bad, but the grammar could be improved.

Interactive comment on Atmos. Meas. Tech. Discuss., doi:10.5194/amt-2016-188, 2016.

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