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Middle atmosphere OH NLTE model and spectroscopy sensitivity study

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In the middle atmosphere, the OH Meinel bands, which involve high-lying vibrational and rotational levels transitions, are in Non-Local Thermodynamic Equilibrium (NLTE) conditions. In this work we present a state-of-art NLTE model for the Meinel bands of OH including the most recent collisional rates and spectroscopic data, and we perform a sensitivity analysis of the spectroscopy uncertainties and their impact in the interpretation of atmospheric data.
A comparison with previous modeling and data analysis shows that major efforts are needed in the understanding of the spectroscopy of OH.