### **Accepted Manuscript**

Laser absorption spectroscopy of methane at 1000 K near 1.7  $\mu$ m: A validation test of the spectroscopic databases

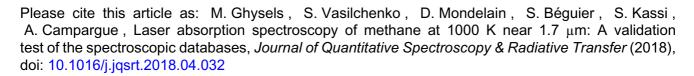
M. Ghysels, S. Vasilchenko, D. Mondelain, S. Béguier, S. Kassi, A. Campargue

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#### ACCEPTED MANUSCRIPT

## Highlights

- A tubular furnace is combined with a diode laser absorption spectrometer
- Spectra of methane are recorded at 964 K near 1.65 µm
- The gas temperature is constant within a few K along the absorption pathlength
- The 2-Temperature method is applied to identify high J transitions up to J=20
- Comparisons with the HITRAN2016, MeCaSDa, TheoReTS and ExoMol lists are discussed



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