
HRMS, 24th Colloquium, Dijon, France, 24 - 28 Aug, 2015

ACCURATE *AB INITIO* PREDICTIONS OF METHANE SPECTRA UP TO 12000 CM^{-1} AT VARIOUS T-CONDITIONS

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We have recently reported the construction of complete hot methane line lists¹ based on accurate *ab initio*^{2,3} and variational calculations⁴ up to 2000 K in the range below 5000 cm^{-1} . Here we have extended this work up to 12000 cm^{-1} by gradually decreasing the temperature. Applications for the modeling of the Titan atmosphere in the range 0.8-5 μm or of astrophysical objects will be discussed and comparison with available lists (HITRAN⁵, EXOMOL⁶) will be given.

This work is supported by French-Russian LIA SAMI and Tomsk State University Mendeleev grant program.

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