

## High-temperature emission spectra and updated calculated spectroscopic database of methane

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In the framework of the e-PYTHEAS project,<sup>2</sup> the C-H stretching region of methane was reinvestigated in this work using high temperature (620-1715 K) emission spectra recorded in Rennes at Doppler limited resolution. New assignments of vibration-rotation methane line positions have been achieved successfully in the Pentad system and some associated hot bands. The new assignments were injected in a global fit of methane line positions. Line intensities, based on previous existing assignments, were also refined.

This work, of interest for modelling the methane spectrum in applications to exoplanetary atmospheres has allowed to update de MeCaSDa database<sup>3</sup> of calculated methane lines, which is accessible through the VAMDC portal<sup>4</sup>.

See: <http://e-pytheas.cnrs.fr>

Reference: B. Amyay et al., *J. Chem. Phys.*, in press (2018).

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<sup>2</sup>see <http://e-pytheas.cnrs.fr>

<sup>3</sup><http://vamdc.icb.cnrs.fr/PHP/methane.php>

<sup>4</sup><http://portal.vamdc.org>