Abstract Submission

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1- Page size: A4 (21 cm by 29.7 cm) – vertical orientation
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4- Layout

- Title: single-spaced, 14 points size, Times New Roman Font (TNR), bold;
- *Authors: single-spaced, 11-point size, TNR font;*
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- Text: single-spaced, 12-point size, TNR font;
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Keywords (max. 5, 10-point size); example: Spectroscopy, Raman shift, RMN, *Luminescence*, Time resolved

5- **References**: in square brackets; max. 5 references, single-spaced, 10-point size

[1] A. A. Author, B. B. Author, C. C. Author., Journal., **100**, 10-20, (2010).
[2] A. A. Author, B. B. Author, C. C. Author., in *Book* (ed. D. D. Editor, Publisher, City, 2000)

Example of abstract

Spectroscopic Line Parameters in the $4\nu_2$ Band of NH_3 and Line Intensities in the ν_1, ν_3 and $2\nu_4$ Bands

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Ammonia molecule has been detected in the atmospheres of Jupiter and Saturn [1,2] and in the Earth's atmosphere [3]. It is one of the most studied molecules related to its inversion doubling, its atmospheric and astrophysical interests.
In this work, self-broadening coefficients as well as self-shift coefficients have been measured for the first time in $4\nu_2$ overtone of NH_3 at T = 295 K using a high-resolution Fourier transform spectrometer. The spectra were analyzed with nonlinear least-squares multi-pressure fitting procedure to eight spectra of pure NH_3. The results are discussed as function of the *J* and *K* rotational quantum numbers and the branches.
The line intensities of this band as well as those of the ν_1 and ν_3 bands lying in the same region as the $4\nu_2$ overtone have been retrieved using the same spectra. These data together with those of $2\nu_4$ band, subject of our previous work [4], allow us to derive the transition dipole moments squared for a total of about 860 lines which were found to exhibit strong *J* and *K* dependences. These moments have been also derived for 63 lines of the $\Delta K = \pm 2, \pm 3$ forbidden transitions of the $2\nu_4^{\pm 2}$ sub-band. These dependences are mainly caused by Fermi and Coriolis interactions transferring intensities between the modes forming the 3 µm region system.
The analysis of these moments allows us to derive a consistent set of line intensity parameters such as vibrational transition moments, band intensities as well as Herman-Wallis coefficients. The derived parameters are found to be in agreement with previous data.
This study is a complement of line parameters in the 3 µm spectral region, which are essential for the analysis of atmospheric spectra.

Keywords: NH_3; 3 µm spectral region; line intensity; transition dipole moment; band strength.

References

[1] V. Kunde, R. Hanel, W. Maguire, JP. Baluteau, A. Marten, Chedin A, *et al*., Astrophys J., **263**, 443-467, (1982).
[2] J. Hurley, LN. Fletcher, PGJ. SB. Irwin, Calcutt, Sinclair JA, Merlet C. Planet Space Science., **73**, 347-363, (2012).
[3] DJ. Brassington, Freiburg, Germany, 17 October, 1988.
[4] N. Maaroufi, C. Jalleli, F. Kwabia Tchana, X. Landsheere and H. Aroui. J. Mol. Spectrosc., **354**, 24-31, (2018).