

# New analysis on the First Negative band System of $N_2^+$ : An experimental and theoretical study

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The knowledge of accurate data on nitrogen species, neutral and ionized ones, are of great importance for the characterization of arcjets [1] and radiofrequency or microwave plasma torches [2–4]. It should also be considered that a good understanding of the molecular ion  $N_2^+$  is of fundamental importance for a better comprehension of reaction mechanisms in Earth's upper atmosphere [5] as well as in the atmosphere of Titan [6]. The need for accurate spectroscopic data, such as wave numbers, molecular constants, Einstein coefficients, for optical diagnostics and radiative modeling of this ion is becoming increasingly necessary. For these reasons, there is a growing need to expand both theoretical and experimental knowledge about the ion, which is becoming increasingly indispensable. Considering all discussions above, the present work reports new experimental measurements on the First Negative band System, including new vibronic bands, obtained by means of high resolution Fourier transform spectroscopy.

## References

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