

ON THE GAS TEMPERATURE DETERMINATION FROM VAN DER WAALS BROADENING IN ARGON - NEON MICROWAVE PLASMAS

J. Muñoz^{1,2}, M. S. Dimitrijević^{3,4} and M. D. Calzada¹

¹*Grupo de Espectroscopía de Plasmas, Edificio A. Einstein,
Campus de Rabanales, Universidad de Córdoba, E-14071 Córdoba, Spain*

²*Département de Physique, Université de Montréal,
C.P. 6128, Succ. Centre-ville, Montréal, Québec, Canada*

³*Astronomical Observatory, Volgina 7, 11060 Belgrade 38, Serbia*

⁴*Observatoire de Paris, LERMA, 5 Place Jules Janssen, 92190 Meudon, France*

E-mail: md.calzada@uco.es, mdimitrijevic@aob.bg.ac.rs

Recently, we proposed a method to determine the gas temperature using the van der Waals broadening of atomic spectral lines for atmospheric pressure Ar-He plasma. Here, our investigations are continued by studying the influence of Ar*-Ne interactions in order to enlarge the applicability of the proposed method for the determination of gas temperature in argon - neon mixtures. The Ar I 425.9 nm line is found to be suitable for the gas temperature determination.

References

- Mermet, J.: 1987, Inductively coupled plasma emission spectroscopy, in: P.W.J.M. Boumans (Ed.), Part II: Applications and Fundamentals, Wiley-Interscience, New York, Chap. 10.
Muñoz, J., Dimitrijević, M. S., Calzada, M. D.: 2011, to be submitted.
Muñoz, J., Dimitrijević, M. S., Yubero, C., Calzada, M. D.: 2009, *Spectrochim. Acta B*, **64**, 167.
Yubero, C., Dimitrijević, M. S., García, M. C., Calzada, M. D.: 2007, *Spectrochim. Acta B*, **62**, 169.