

Abstract Submitted
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Generalized Hyperspherical Sturmian functions applied to three-body ionization problems¹ LORENZO UGO ANCARANI, Universite de Lorraine, Metz, France, DARIO M. MITNIK, IAFE and Universidad de Buenos Aires, Argentina, GUSTAVO GASANEO, Universidad Nacional del Sur, Bahia Blanca, Argentina — Very recently we introduced a methodology to solve three-body break-up problems based on hyperspherical Generalized Sturmian Functions (HG SF) [1]. The use of hyperspherical coordinates makes easier and more natural the incorporation of Peterkop's asymptotic behavior for ionization processes. This technique is an extension of the Generalized Sturmian method implemented before in spherical coordinates [2]. In this report we address different issues involved in the study of single and double ionization of atoms by electron impact, in particular with respect to the so called (e,2e) and (e,3e) processes. For example, we analyze the physical characteristics of different spatial regions of the scattering wave function and the extraction of transition amplitudes.

[1] G. Gasaneo and L. U. Ancarani, J. Phys. A **45**, 045304 (2012).

[2] A. L. Frapiccini, J. M. Randazzo, G. Gasaneo and F. D. Colavecchia, J. Phys. B **43** 101001 (2010).

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