Electron impact ionization of CH$_4$, H$_2$O and NH$_3$ with a Sturmian approach\textsuperscript{1} LORENZO UGO ANCARANI, CARLOS MARIO GRANADOS-CASTRO, Université de Lorraine, France, DARIO M. MITNIK, IAFE, Buenos Aires, Argentina, GUSTAVO GASANE, Universidad Nacional del Sur, Argentina

The study of ionization of molecular systems is more complex and challenging than in the atomic case because the Hamiltonian is generally multicenter and highly non-central. Additionally, in most experiments the molecular spatial orientation is not resolved, so that the random orientation of the molecule must be taken into account through an adequate angular average. In this contribution, we illustrate our implementation of a Sturmian approach, based on Generalized Sturmian Functions \cite{1}, for the study of single electron impact ionization of small molecules. Molecular model potentials are proposed to describe the interaction between the ejected electron with the parental ion. A similar approach was used before to study photoionization of molecules \cite{2}. The calculated triple differential cross sections for ionization from valence orbitals of CH$_4$, NH$_3$ and H$_2$O will be reported, and compared with different available theoretical and experimental data.

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