Calculation of electron emission cross sections in proton-biomolecule collisions\textsuperscript{1} TOM KIRCHNER, MARKO HORBATSCH, York University, HANS JURGEN LUEDDE, Goethe University Frankfurt — Ion collisions with biologically relevant molecules have received considerable attention in recent years, in large parts because of their relevance in biomedical and other applications. We have developed an independent-atom-model (IAM) based description of ion-molecule and ion-cluster collisions that can be applied to these problems \cite{1,2}. The model improves on the simple Bragg additivity rule by taking geometric screening corrections due to overlapping atomic cross sections into account. A pixel counting method (PCM) is used for the (exact) calculation of the screening corrections and the method is referred to as IAM-PCM. We have used the IAM-PCM to study the proton-impact induced net ionization of a variety of target systems, including DNA/RNA nucleobases and a number of amino acids. At the conference we will present an overview of our results and specifically discuss cross section scaling relations. \cite{1} H. J. Lüdde et al., Eur. Phys. J. D 70, 82 (2016). \cite{2} H. J. Lüdde et al., Eur. Phys. J. B 91, 99 (2018).

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