

Abstract Submitted  
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**Ionization of Atomic Hydrogen by 75keV Proton Impact**<sup>1</sup> AARON LAFORGE, MICHAEL SCHULZ, JADON ALEXANDER, Missouri University of Science & Technology Physics Dept. — The dynamics and interactions of the few-body problem is one of the most fundamental problems in physics due to the fact that the Schrödinger equation is not solvable in closed form for more than two mutually interacting particles. A proton colliding with atomic Hydrogen is a particularly important system to study the few-body problem for its simplicity (only three particles involved), and the underlying force, electromagnetism, being completely known. We performed a kinematically complete experiment to study ionization in this collision system. The fully momentum analyzed recoil ions and scattered projectiles were measured in coincidence so that the ejected electron momentum can be deduced from momentum conservation. As a result, it is possible to extract the maximum information about the collision dynamics for this benchmark system. Multiple differential cross sections will be compared to data obtained recently for p + He collisions, for which serious discrepancies to theory were found [1]. [1] N.V. Maydanyuk et al., Phys. Rev. Lett. 94, 243201 (2005)

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