Abstract Submitted
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The power of three-dimensional imaging for an unambiguous identification of the ro-vibrational state of H_2^+, D_2^+, and HD^+[1] J.B. SAUZA, C.I. GUILLEN, A.C. DUOT, V.M. ANDRIANARIJAONA, Department of Physics, Pacific Union College, Angwin, CA 94508 — We are presenting a three-dimensional imaging technique that could efficiently measure the ro-vibrational states of small diatomic molecular ions such as H_2^+ in two steps. First, the molecular ion is sent toward a jet of alkali atoms to undergo a resonant dissociative charge exchange. Then, the positions of the fragments and their flight time difference are measured with two position sensitive detectors. From these measurements, we obtained the value of the kinetic energy release, which is directly related to the original vibrational excitation of H_2^+. This technique scheme was first developed by D. P. de Bruijn and J. Los (Rev. Sci. Intstrum. 53, 1020, 1982). Details and examples will be presented.

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