

Abstract Submitted
for the MAR15 Meeting of
The American Physical Society

Use of atomic hydrogen source in collision: technological challenges¹ R.T. HOVEY, E.L. VARGAS, D.I. PANCHENKO, D.A. RIVAS, V.M. ANDRIANARIJAONA, Department of Physics, Pacific Union College, Angwin, CA 94508 — Atomic hydrogen was extensively studied in the past due to its obvious fundamental aspect. Also, quite few investigations were dedicated to atomic hydrogen sources because the results of experimental investigations on systems involving H would provide very rigorous tests for theoretical models. But even if atomic hydrogen sources are currently widespread in experimental physics, their uses in experiments on collisions are still very challenging mainly due to threefold problem. First, there is the difficulty to create H in the laboratory in sufficiently large number densities. Second, there is the strain to adjust the velocities of the produced atomic hydrogens. And third, there is the toil to control the internal energies of these atomic hydrogens. We will present an outline of different techniques using atomic hydrogen sources in collisions, which could be found in the literatures, such as merged-beam technique, gas cell technique, and trap, and propose an experiment scheme using a turn-key atomic hydrogen source that experiments such as charge transfer could benefit from.

¹This work is supported by the National Science Foundation under Grant No. PHY-1068877.

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Date submitted: 20 Nov 2014

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