

Abstract Submitted
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Dynamics of OH in a magneto-electrostatic trap¹ MANUEL LARA, BENJAMIN LEV, BRIAN SAWYER, JUN YE, JOHN L. BOHN, JILA/University of Colorado/NIST — OH molecules resulting from Stark deceleration have been recently confined in a magnetic quadrupole trap. An electric field can be simultaneously applied to the trap, significantly influencing its dynamics. We have modeled the potential energy that governs the dynamics of the molecules in such a “magneto-electrostatic” trap, using a complete effective molecular Hamiltonian for OH. We find, however, that the resulting trapping potential can also be easily understood and even semi-quantitatively reproduced using simple classical models. We also discuss the trap lifetime due to non-adiabatic transitions to untrapped states, i.e., the analog in this trap of Majorana transitions in a quadrupole magnetic trap.

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