

Abstract Submitted
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Stark mixing under full interaction in ion-Rydberg atom cold collisions¹ RAYMOND FLANNERY, GOUTHAM BALARAMAN, Georgia Institute of Technology — A molecular dynamics simulation technique was developed to determine Stark mixing transitions, $n\ell \rightarrow n\ell'$, in Rydberg atoms. The full ion-Rydberg atom interaction could therefore be employed. The transition probabilities were compared with the previous exact analytical results which are appropriate only to the ion-dipole interaction. The effect of higher-order multipoles could therefore be assessed. It is shown that the full interaction becomes important at extremely low incident speeds v and small-intermediate impact parameters b . This importance is illustrated via various contour plots in the b, v -plane.

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