

Abstract Submitted
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Interactions of polar alkali dimers JASON BYRD, JOHN MONTGOMERY, JR., ROBIN CÔTÉ, University of Connecticut Department of Physics — The effects of external electric static fields on the interactions of polar alkali diatoms for the purposes of alignment is investigated for a variety of trapping geometries and external field strengths. We also present new results for the dispersion and induction van der Waals coefficients calculated using the sum over states method of time dependent density functional transition moments. Additionally the static electric moments and polarizabilities for each heteronuclear alkali diatom have been calculated. These new results are used to accurately model the interactions between polar alkali molecules in the long range by a van der Waals expansion up to R^{-8} . We find that strong alignment of specific heteronuclear diatoms is possible with strong but physically realizable external electric fields.

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