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Photoassociation of alkali tetramers into high vibrational states[1]

JASON BYRD, SUBHAS GHOSAL, JOHN MONTGOMERY, JR, ROBIN CÔTÉ, University of Connecticut — he formation of alkali tetramers in high vibrational states from two polar molecules, $XY+XY \rightarrow X_2Y_2$, using photoassociation has been investigated for various species. Diatom-diatom interaction surfaces have been calculated using *ab initio* equation of motion coupled cluster and time dependent density functional van der Waals methods. Using an external electric field to improve the associated Franck Condon factors, we propose a two color time dependent wavepacket scheme to probe the high vibrational level states of various alkali tetramers.

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