Abstract Submitted
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Triplet-singlet conversion in ultracold Cs_2 - production of ground state molecules[1] MARIN PICHLER, Department of Physics, Goucher College, Baltimore MD, NADIA BOULOUFA, OLIVIER DULIEU, Laboratoire Aime Cotton, CNRS, Orsay, France — We present theoretical calculations in molecular cesium for the conversion of ultracold triplet to singlet molecules through the 0_u^+ system. We show that strong mixing of $A^1\Sigma_u^+ \sim b^3\Pi_u$ states facilitates the triplet-singlet conversion. The conversion opens additional channels for enhanced production of deeply bound ultracold molecules in the ground $X^1\Sigma_g^+$ state. In addition, our calculations reveal that due to this triplet singlet conversion, the optical pumping and subsequent vibrational cooling can not be applied to the ground triplet $a^3\Sigma_u^+$ molecules due in part to this loss mechanism.

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