Abstract Submitted
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Spin-orbit effects on reflectance anisotropy spectroscopy of aclean CdTe(001) surface[1] RAÚL A. VÁZQUEZ-NAVA, B.S. MENDOZA, N. ARZATE, Centro de Investigaciones en Óptica, León, Guanajuato, México. — The spectroscopical reflectance anisotropy (RA) response of a clean (001) surface of CdTe, which exhibits a $c(2 \times 2)$ surface reconstruction, is studied using a microscopic formulation based on a semi-empirical tight binding approach (SETB) which includes the spin-orbit (SO) interaction. Following Ref. 1, we apply an unitary transformation to the usual SETB sp^3s^* basis to describe the electronic states in terms of a set of atomic states which are eigenstates of the total angular momentum (TAM). These states are better suited to treat the SO interaction in this model, and their use in the computation of the RA signal is straightforward [1]. We show how the RA changes when SO is taken into account and compare our theoretical results with experimental measurements of Ref. 2. [1] R.A. Vázquez-Nava, B.S. Mendoza and C. Castillo, Phys. Rev. B **70**, 165306 (2004). [2] J. R. Molina and R. Espinosa-Luna, J. Phys. D: Appl. Phys. (2004), accepted.

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