Supplemental information file of: Electronic dispersion, correlations and stacking in the photoexcited state of 1T-TaS_2

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Synchrotron based ARPES of 1T-TaS_2

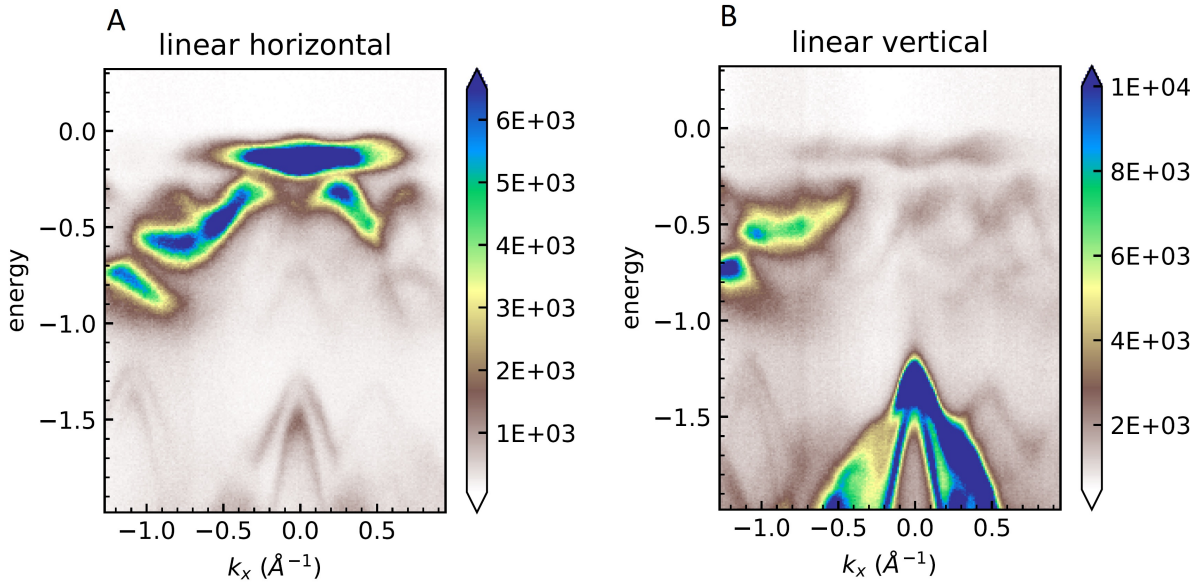

Figure 1: Photoelectron intensity maps acquired along the $\Gamma - M$ direction with photon energy of 96 eV and P polarization (panel A) or S polarization (panel B).

Low Energy Electron Diffraction of 1T-TaS_2

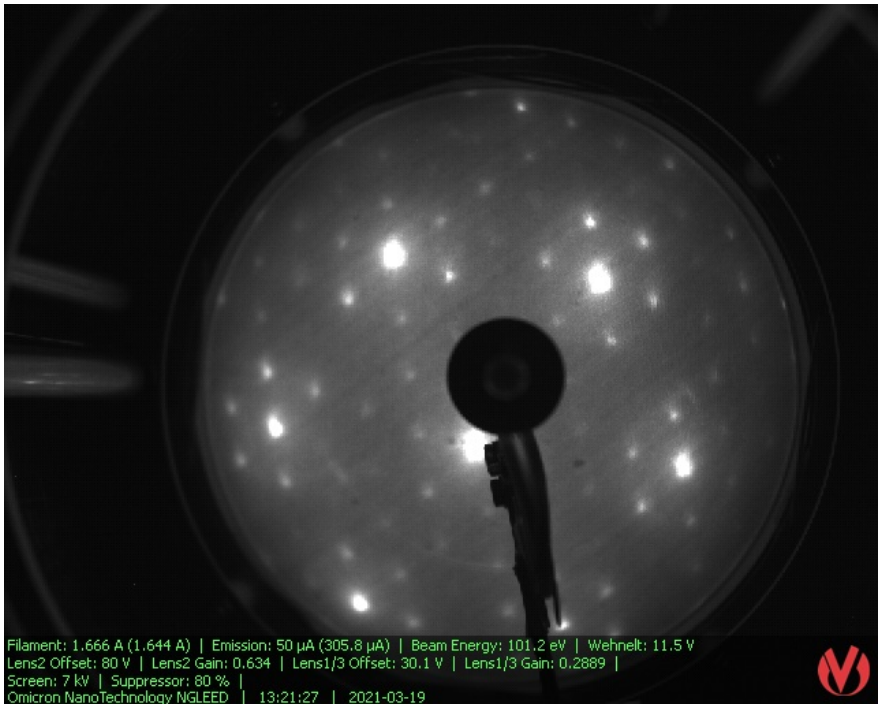

Figure 2: LEED pattern of 1T-TaS_2 acquired in the commensurate CDW phase at 145 K.

Orbital projection of the bands

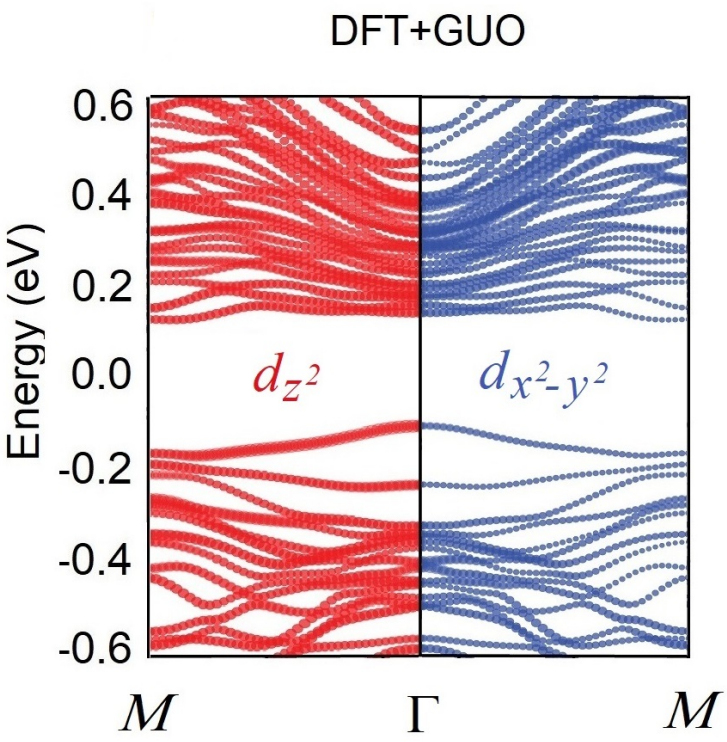

Figure 3: Band structure of the AL stacking configuration calculated by DFT-GUO and $\overline{U} = 0.45$ eV. In red and blue are the projections on the d_{z^2} and $d_{x^2-y^2}$, respectively. Size of the marks indicate the relative weight of the orbital projection. Note that states just below the chemical potential (LMPB) have mainly d_{z^2} component whereas the states just above the chemical potential (HMPB) display also a sizable projection on $d_{x^2-y^2}$.